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Correct Malleable Casting Patterns

Proper Gating Saves Much in Reducing Loss of
Castings—Allowing for Inevitable
Shrinkage

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MANY thousands of dollars are thrown away yearly on malleable castings because of the fact that the patterns are not properly made nor properly gated. A molder cannot turn out, in a day or a week, so many good castings from a poor pattern as from a correctly designed one, and the same condition will prevail if the pattern is not properly gated or if the gates are not properly proportioned as to feeders, etc. A correctly designed and gated pattern may have a higher initial cost than one which is made without giving much consideration to the molding cost, but the chances are that the cost is no greater. Supposing, however, that the cost is more, it will not amount to over a few dollars for a gate of patterns; and the initial excess cost, if any, is final, while the saving in the cost of the castings is continuous.

"Not the First Cost, but the Upkeep"

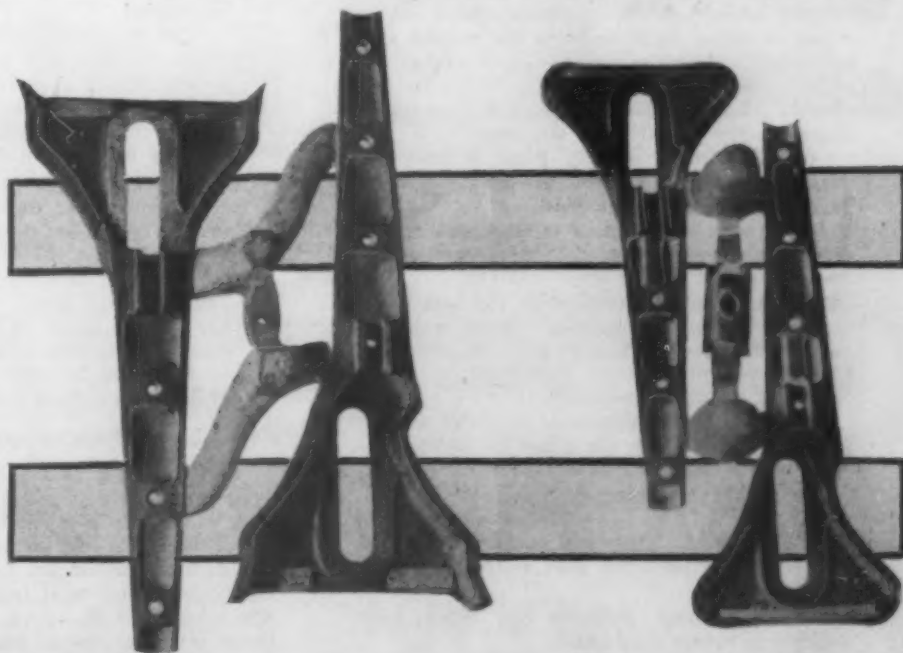
Recently the writer had a gated pattern returned from the malleable foundry because the casting cost was too high. This was an iron pattern, two pieces on

a gate. We then made two aluminum patterns and sent them to the malleable foundry to be gated. The cost of the two patterns was \$8, as we made them from the original wooden pattern which we had. The foundry charged \$12 to gate the patterns the way they wanted them. Total cost, including expressage both ways, was less than \$22. An order was placed for 300 castings from the new gate. The castings weighed 4 lb. each and the price dropped from 17c. to 12c. per pound, a saving of 5c. per pound, or a total saving of \$38 on this one order, after deducting the cost of the new patterns and gate. On future orders the saving will be the full amount.

Now let us consider some of the common mistakes which occur in the designing of the patterns and in the gating of these same patterns, all of which add to the cost of the malleable casting at the foundry and frequently in the machine shop, when the castings are received. We can even go a step further and include the assembling department. To follow the matter methodically it has been arranged in a series of questions and answers: the questions by the writer and the

Fig. 1 (Left)
Shows a Pattern
Incorrectly Gated,
as No Provision
Is Made for
Shrinkage, Nor
to Prevent Sand
from Flowing in

Fig. 2 (Right)
Shows Proper
Gating, with
Shrink Balls to
Feed the Casting
as It Shrinks.
Sand and slag
would be caught
here, thus pro-
tecting the cast-
ings from their
intrusion



answers consolidated from letters received from leading malleable foundries.

Question 1—What are the most common mistakes in patterns, including gating for malleable castings?

Answer—(A) Many of the mistakes which are reflected in patterns are the result of poor design on the part of the engineer or draftsman.

(B) In many instances complex sections are sought without any regard to the necessary draft or the manner in which the iron must flow.

(C) Core prints not properly drafted and core boxes not properly made to correspond to the draft on the core prints.

(D) Where there are a number of patterns on a gate, patterns are frequently too far apart and not correctly gated.

(E) Often sufficient consideration is not given to avoiding the shrinkage which always occurs and often makes the casting defective.

(F) Patterns are made along the same lines as are required for iron or brass castings, using the same kind of gating, shrinkers, etc.

(G) Gates not properly proportioned as to feeders, and patterns gated at the thin section instead of the heavy section, when gating at the heavy section would give best results.

(H) Patterns soldered onto the gates instead of being pinned.

(I) Patterns and gates made in a solid piece and then the gates filed down where they connect with the pattern. The patterns soon break off at that point.

(J) Patterns well polished on the flat or easily "getatable" surfaces, but in other places left rough, giving results no better than ordinary castings.

(K) Improper parting lines and arrangement of cores.

Aluminum and Brass Best Metals to Use

Question 2—What is the most satisfactory metal for patterns and for core boxes, and why?

Answer (A) Aluminum and brass are the most satisfactory metals for patterns. Brass patterns are recommended up to the point where the weight of the pattern would slow up the production, except in cases where the patterns are mounted on match plates, where aluminum would be preferable. Large patterns should be made of aluminum.

(B) Aluminum is steadily growing in favor as, being light, it helps the molder and, being made with present alloys, is giving excellent service.

(C) Aluminum patterns are somewhat more readily jarred from the gates.

(D) Aluminum usually gives a smoother pattern casting and consequently the pattern maker spends less time dressing the pattern. Being lighter in weight, it is more easily handled by the molder and does not require such heavy rapping as the brass pattern.

(E) Iron core boxes provide the best wearing material for the purpose. When iron core boxes would be too heavy, wood is preferred. Gang boxes are always preferable to single boxes, if quantities warrant.

Question 3—Do aluminum patterns wear as long as brass? Are the gates as strong? In other words, will they stand the same average abuse as brass patterns?

Answer (A) Brass patterns wear longer than aluminum. They will stand more abuse.

(B) Brass patterns hold onto the gates much better.

(C) Aluminum patterns are much more difficult to repair than brass.

(D) Where patterns are plated there seems

to be little difference between aluminum and brass, as to the service received.

Question 4—Is the average cost of aluminum patterns more or less than brass? As we know, aluminum costs more per pound, but is the extra cost offset by the difference in weight?

Answer (A) As to relative cost there is not much difference in cost, as wages are the prime factor.

(B) The cost of dressing an aluminum pattern is usually less but there is extra work required in arranging the proper brass gating.

Question 5—When are iron patterns desirable?

Answer (A) Iron patterns are desirable only in cases where they are intricate, or if made of brass or aluminum would bend or spring out of shape.

(B) Iron patterns are desirable where the pattern is mounted on a machine and becomes a fixed part of the molding machine and does not have to be handled or lifted, by the molder, in the molding operation.

(C) Gear patterns made of iron, if the patterns were kept in proper condition, would give a much better and cleaner mold than if made of other materials; that is, when the teeth are cast on the gear.

Proper Position for Gates

Question 6—Is it best to gate to a heavy or light section of the pattern?

Answer (A) Where it is not necessary to add feeders to the pattern, to take care of the shrinkage, it is desirable to do the gating on the light part of the pattern. If it is necessary to add feeders, the pattern should be gated at a point where the section of metal is heavy enough to do the feeding desired, that is, where the section of the pattern is heavy enough so that the hot iron will feed through to the part where the shrinkage is liable to occur.

(B) Gating, in almost all cases, must be on heavy section of the pattern to take care of the feed, shrinkage, dirt, etc. Only in exceptional cases would patterns be gated on the light section.

(C) Recommend gating to the section of the pattern from which can be obtained the best flow of metal, and feeders should be arranged so as to assist in keeping the metal, in the different sections of the castings, at a uniform temperature during the cooling or freezing period.

(D) A shrink ball is placed at the point where the light and heavy sections meet. This is to eliminate the shrinkage that would result from the heavy section cooling considerably slower than the light section and, therefore, drawing metal from this intersection.

(E) The proper place to gate a pattern depends entirely on its shape, but usually, where the heavy section requires feeding, it is found best to gate to this point, with sufficient feeders provided to eliminate any possible shrinkage that may occur. In cases where feeders are not required, the gating is usually governed by the manner in which the pattern can be arranged to gate the greatest number of patterns in a flask size.

Examples of Properly and Improperly Gated Patterns

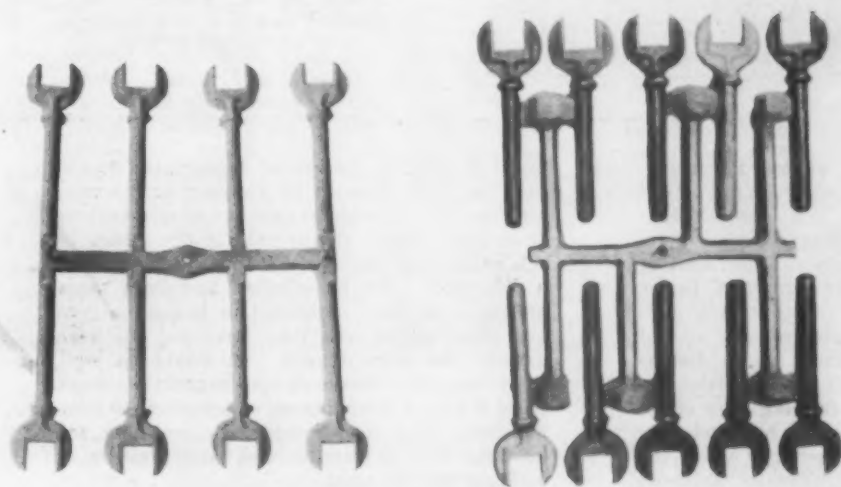
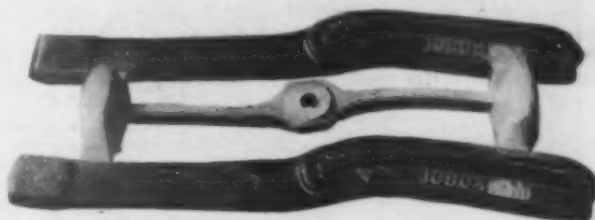
Fig. 1 illustrates a pattern incorrectly gated, as no provision has been made to take care of shrinkage that will occur in a casting of this character and, as the shrinkage would occur at a vital part of the casting, castings would not be satisfactory, as they would not be so strong as if fed up properly and the shrinkage taken care of. Also, as these patterns are gated, there is no provision made to prevent sand or slag from flowing into the casting when the mold is poured.

Fig. 2 shows these patterns gated correctly, with proper feeders or shrink balls, which will take care of shrinkage which would otherwise develop, and these patterns are so gated as to prevent sand or slag from flowing into the castings during pouring.

Fig. 3 shows a gate of eight patterns incorrectly gated, as no provision whatever is made to take care of shrinkage, which is sure to develop in a casting of this character. This gate also has outside dimensions of 10 $\frac{1}{2}$ x 13 in. Fig. 4 shows the same patterns illustrated in Fig. 3, except that they are gated correctly, with suitable shrink balls to feed up the castings so they will come entirely solid. This gate contains ten patterns instead of eight, and yet the patterns are so arranged that they can be used in a smaller flask than is required by the gate of eight patterns shown in Fig. 3, as the outside dimensions of this gate of ten patterns are 10 x 13 in. only. Fig. 4, in addition to illustrating the fact that patterns properly gated will give solid castings, also shows that, by having patterns properly arranged on the gate, additional patterns can sometimes be included on the gate without increasing the size of the flask, which enables the foundry to reduce the cost of manufacture, as a greater

does the depth of this lighter section indicate the grade of the casting? In other words, would the depth of this lighter section have anything to do with the malleable quality of the casting?

Answer (A) Malleable iron is known as the "black heart iron." The main derivation undoubtedly came from the black center of properly annealed iron. The lighter surface is due to the fact that the carbon content of the surface is less than that of the center portion of the casting, due to the action of the heat. If the fracture is gray or spotty, it may show defective material which annealing will



Incorrect Gating in Fig. 3 (Extreme Left) Is Corrected in Fig. 4 (Center) by Providing Shrink Balls and Better Locations of Gates. At the same time, 10 pieces can be made in a space actually smaller than that previously required for eight. The same rearrangement (above) from the one below gives proper results.

weight of iron is produced in every mold. This is reflected in a lower cost to the purchaser.

Fig 5 illustrates, at top, central links for a special chain and the links were proportioned as shown in the sketch. In connection with this method of gating, which proved to be improper, it was possible to have 12 pieces to the gate with one gate to the flask; whereas, gated as shown in the lower portion, there were only four pieces to the gate and two gates to the flask. This reduced the number of pieces molded to the flask, but increased the percentage of good castings received.

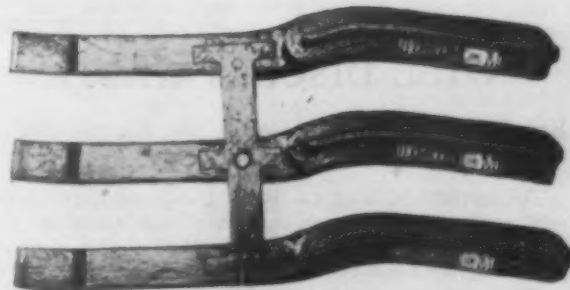
Fig. 6 indicates A and B as the points where shrinkage would exist if the patterns were improperly gated. The average patternmaker would gate at point C. This pattern should be gated at A and B, with feeders located there to eliminate shrinkage that is sure to exist otherwise.

Figs. 7 and 8 show a pattern incorrectly gated with three pieces and then correctly gated with two pieces, with feeders at both ends and shrink balls properly located.

It will be noted that at times the number of patterns on a gate can be increased, with satisfactory results, but that at other times fewer patterns to the gate are advisable. While this latter method will reduce the quantity of castings made, it often will increase the percentage of good castings from each mold.

Allowing for Shrinkage

Question 7—What amount of shrinkage will there be in the malleable casting when ready for shipment, that is, after being annealed? The outer shell of a malleable casting is considerably lighter than the center:



not improve. If the fracture in places looks rusty or dirty, this usually indicates shrinkage.

(B) While the normal fracture of a good piece of malleable iron should show a velvety black heart, surrounded by a thin white edge which forms the outer shell of the casting, yet many very good malleable castings are produced and used satisfactorily that vary from the above described fracture.

(C) A fracture of malleable iron, observed with the naked eye, should show uniform in color over its entire area, except the white skin immediately at the surface of the casting, which varies from a mere trace to 1/32 in.

(D) Finished malleable castings should show a shrinkage of $\frac{1}{4}$ in. to $\frac{3}{16}$ in. per foot, depending upon shape and cross sections.

(E) $\frac{1}{4}$ in. per foot should be allowed for shrinkage on the working pattern, to get the

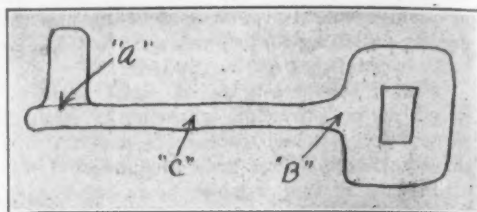
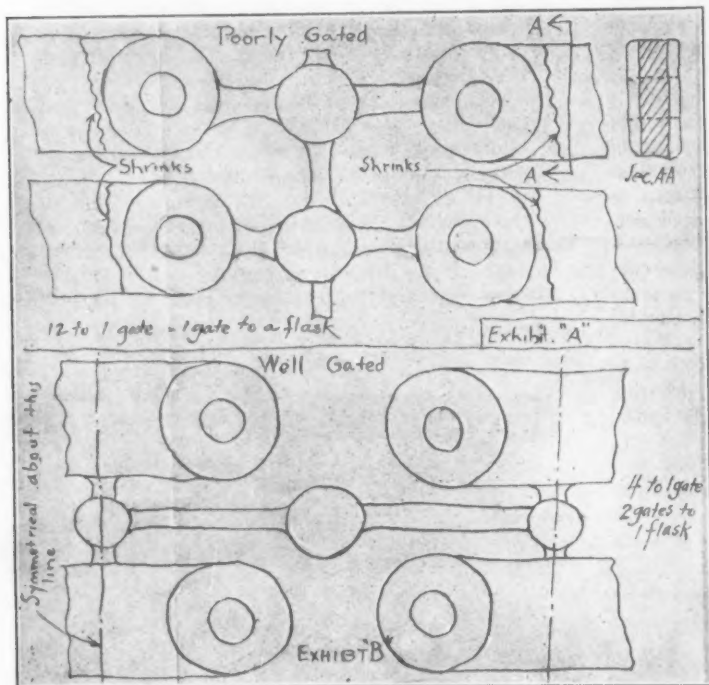


Fig. 5 (Left) Illustrates at Top a Poorly Gated Arrangement for Casting Chain Links. This was corrected by the layout below it, which provided proper shrinkage allowance. While fewer pieces could be cast in one flask, the proportion of good castings was increased

In Fig. 6 (Upper Left) Gating Should Be at A and B, Instead of the Place, C, Where the Average Molder Would Do It. Feeders located at A and B would prevent shrinkage strains

desired dimension on the annealed casting.

(F) The question of shrinkage is important and very difficult to compute. It is common practice to say that malleable iron shrinks $\frac{1}{8}$ in. per foot, excepting in the case of long, slender pieces, when shrinkage may run $\frac{3}{16}$ in. or even $\frac{1}{4}$ in. per foot but, while that may generally be the case, it is not accurate and should not be used where given limits as to dimensions are required. In small work, particularly with gated patterns, the rapping may offset the shrinkage. Patterns molded by hand may be rapped more or less, depending upon the disposition of the molder, whereas patterns

made in vibrator frames or upon plates do not get the same amount of rapping and consequently the ultimate results as to dimensions of castings would not be exactly the same. In malleable iron the annealing will make quite a difference. We have taken test bars made on the same heat, annealed in the same pots and same ovens, and they have not all been exactly the same length. It would be well, therefore, for a customer who expects his work to be within a close degree of accuracy to communicate with the foundry, to see how the patterns will be handled and what system of molding will be used.

WILL DISCUSS WASTE

Employee Training Also to Be Considered at Washington Meeting

WASHINGTON, May 5.—W. C. Dickerman, vice-president in charge of the operations of the American Car & Foundry Co., will discuss the method of this company in dealing with the problem of waste in connection with a group session of the Department of Manufacture at the thirteenth annual convention of the Chamber of Commerce of the United States, to be held in Washington, May 19-22.

Another aspect of the same question will be dealt with by L. A. Hartley, Director of Education of the National Founders' Association, who will discuss employee training. Discussion of methods of reducing avoidable wastes in industry will be one of the most interesting topics of the convention. The cause for waste, 50 per cent of which has been attributed to faulty business management are manifold, covering not only materials and equipment but labor, says a statement by the chamber.

The attention of the meeting will be focused principally upon the last phase of the problem, practical methods by which cooperation and team work on the part of the individual employee can be secured in order that daily production schedules can be attained with reasonable regularity.

The subject of employee training will cover the conservation of human resources in industry in respect to which many manufacturers have been almost as shortsighted as they have been in the conservation of mate-

rial resources, says the statement, which adds: "It is now recognized that provision for further labor supply is as important as the development of products and markets. The floating labor supply is both inefficient and expensive.

"How these difficulties may be overcome, how certain industries are meeting the question of providing an ample and efficient producing personnel, how the demand for skilled workmen who are necessary even in this day of automatic and single-purpose machinery is met are some of the questions that will be discussed by representative industrialists following the two addresses."

Another important subject will relate to the general problem of distribution. It will be dealt with in a variety of aspects and progress that has been made in the direction of a solution of the distribution problem will be indicated in an address by Sidney Anderson, who was chairman of the Joint Congressional Commission of Agricultural Inquiry, and is now president of the National Millers' Federation. There will be a number of other speakers, among them William E. Humphrey, Federal Trade Commissioner, who will explain the commission's new procedure and policy with reference to trade practices.

The Machinery Club of Chicago has elected officers for the coming year as follows: President, F. L. Kosl-hase, National Stamping & Electric Works; vice-president, R. W. Barry, Drying Systems, Inc.; treasurer, H. J. Reeve, Reeve-Fritts Co.; secretary, H. S. White, Cleveland Twist Drill Co.; assistant secretary, H. F. Kempe, H. F. Kempe Co.

AMERICAN ZINC INSTITUTE

Annual Convention Decides to Release Statistics Earlier—Progress in Composing Differences

ST. LOUIS, May 5.—The tendency of the miner and smelter of zinc to compose whatever differences that may have arisen between them and to work for the good of the industry as a whole was emphasized at the seventh annual convention of the American Zinc Institute, which was held at Hotel Statler, St. Louis, April 27 and 28. The outstanding feature was a discussion of "The Miner's Viewpoint," by Eugene H. Wolff, past president of the institute, and "The Smelter's Viewpoint," by Leland E. Wemple, president Illinois Zinc Co. Stewart A. Trench, C. S. Trench & Co., New York, who followed, attempted to reconcile the two viewpoints in a discussion of "The Zinc Business."

"The Story of Fire Clay Refractories," a subject of increasing importance in the zinc industry, was discussed for the first time before the institute by L. M. Richard, consulting engineer and economic geologist. Other papers were read on "Electrothermic Zinc Smelting," by Robert Lepsoe, consulting metallurgical engineer, Consolidated Mining & Smelting Co. of Canada; "Zinc Coating," by C. S. Trewin, technical department, New Jersey Zinc Co.; "Milling Practices in Tri-State District," by Frank E. Weeks, Velie Mines Co., and "General Conditions," by Adolph Boldt, of the Chamber of Commerce of the United States.

The institute decided to release its statistics for publication immediately upon their issuance, instead of holding them five days for publication release. They will be released on the tenth of each month.

In the discussion of the advertising campaign, it was brought out that some of the more conservative members of the institute felt that the relatively small resources of zinc ore should not be exhausted through a campaign for the larger uses of zinc, while the less

conservative thought that there should be no fear along this line. It was decided to continue seeking subscriptions until July 1 to complete the campaign fund of \$100,000.

The institute continued the financial plan for its general purposes which has been in effect for the last three or four years, which includes the subscription of 5c. a ton on slab zinc, 2½c. on 50 per cent concentrates and 1½c. on less than 50 per cent concentrates.

The number of directors was increased from 21 to 24, the new directors being Charles A. H. deSaules, president United States Zinc Co.; James F. Robertson, Commerce Mining & Royalty Co., and L. E. Wemple.

The directors elected these officers:

President, A. P. Cobb, vice-president of the New Jersey Zinc Co., New York; first vice-president, A. E. Bendelari, vice-president Eagle-Picher Lead Co., Chicago, who is the retiring president; second vice-president, Jesse G. Starr, Quinton Spelter Co., Joplin, Mo.; third vice-president, John A. McCarthy, Anaconda Copper Mining Co., New York; treasurer, Howard I. Young, American Zinc, Lead & Smelting Co., Mascot, Tenn., and secretary, Stephen S. Tuthill, New York.

Mr. Tuthill has been secretary of the institute since it was organized under his direction in 1918. It started with 20 members, while it now has 206, representing virtually 100 per cent of those engaged in the mining, smelting and rolling of zinc. More than 100 members attended the convention, the largest in the history of the organization.

The institute had as its guests the senior class of 15 of the Missouri School of Mines at Rolla, who attended all of the sessions, including the round table discussion led by Dr. Dorsey A. Lyon, acting director United States Bureau of Mines.

Mr. Bendelari was toastmaster at the banquet held at Hotel Statler on Monday evening, April 27. The principal speaker was James Schermerhorn, former publisher of the *Detroit Times*, and talks were made by Richard Jenkins of Galena, Ill.; E. M. Johnson of Henrietta, Okla., and S. A. Trench.

A BINOCULAR MAGNIFIER

New Instrument to Relieve Machinists' Eye Strain

In certain industries where visual examination is necessarily employed by mechanics and machinists at lathes and at other tools in order to gage the progress of precision work, eye strain and fatigue often result from the smallness of the product to be examined. To correct this difficulty a new instrument, known as the "binocular stereo magnifier," has been put on the market recently by E. Leitz, 60 East 10th Street, New York. It is claimed that, by the use of this new instrument, the minutest parts can be inspected and technical details controlled, as well as the smallest units adjusted to their relative position in an accurate and reliable manner.

The new instrument is described as producing a stereoscopic image which shows the object under examination in plastic relief, sharper and clearer than by the naked eye. It is suggested that the use of this instrument may eliminate some of the large losses in production, and that there will be a diminution in the constant falling off in efficiency and quality of production, due to poor vision.

The new magnifier is furnished for use with a variety of different stands to suit each particular requirement and, since the prism body can readily be interchanged with any stand offered, a saving in cost of installation will always prevail. It is pointed out that when using the binocular magnifier the object is reproduced in its actual orientation, or, in other words, in the identical position as seen with the naked eye. It resembles a pair of prism binoculars, arranged on a stand as shown in the illustration, each tube being rotated on its axis, permitting an adjustment of the interpupillary distance of the observer's eyes. The

prism bodies are equipped with eyepieces which slide into tubular mounts, allowing one to correct any differences of vision between the observer's eyes.

The instrument permits a magnification from 3.5 to 30 diameters, which is claimed sufficient for practically



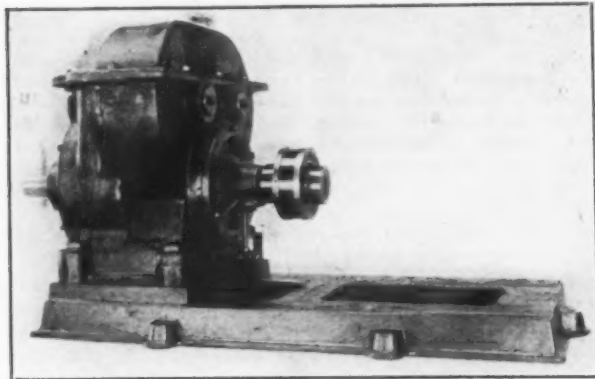
Using the Binocular Stereo Magnifier for Eye Strain Relief

all calibrations and control work on finished or semi-finished products. The working distance from the objectives' prism body to the specimen varies up to 6 in. and is dependent upon the magnification used. One can readily cover an object up to 2 in. in diameter with low-powered eyepieces whereas, using the higher eyepieces, the field of view is slightly decreased but is considerably larger.

Industrial Type Speed Transformer

A spur-gear speed transformer designated as its "industrial type" and intended for general industrial work where speed transformer units are operated under continuous or heavy service conditions has been brought out by the Hill Clutch Machine & Foundry Co., Cleveland.

All gears have cut teeth of 20-deg. involute form, the teeth being short in length and thick in cross section to assure strength. Both the high and low speed shafts are supported in the central housing in double bronze bearings, and provision is made for



Speed Transformer for Conveyor and Other Drives

ordinary thrust conditions. The high and low speed shafts are in identical axle alignment, the action being positive and both shafts revolve in the same direction. The gears are easily accessible as the cap at both ends can be removed conveniently. Continuous splash system of lubrication is employed, a metal disk on the high-speed shaft automatically lubricating all the gears and bearings. The unit is inclosed in a dust proof leak proof case.

The transformer is made in seven sizes. Each size has a number which bears a fixed relation to the diameter of the low-speed shaft, the number also indicating the horsepower the low-speed shaft is capable of transmitting safely at 100 r.p.m. The transformer is offered for use in connection with conveyor drives, steel plants, smelters, pulp and paper mills, refineries, cement mills, brick plants and other plants where a speed changing device is required.

Fire Resistance of Reinforced Concrete Columns

Reinforced concrete columns subjected to fire tests when carrying regular working loads form the subject of a 76-page publication of the Bureau of Standards, designated as technologic paper No. 272. Copies may be obtained at 25c. each from the Superintendent of Documents, Government Printing Office, Washington.

One of the strong features of reinforced concrete has been the fact that the cement and aggregate forming the concrete, and the steel forming the reinforcing, have almost identically the same coefficients of expansion when subjected to varying temperatures. This fact has preserved the bond between the two and prevented the rupture which otherwise must have occurred in millions of cases. Under conditions of fire, however, where the exterior is subjected to a temperature far exceeding that which penetrates to the interior of a column or other member, this similarity of expansion does not prevail, with the result that concrete spalls off, leaving the steel exposed. Under this condition the steel rapidly softens from the application of intense heat, with resultant collapse or partial collapse of the column or wall or building.

In the present tests it was demonstrated that concrete columns require the protection of independent heat insulating materials just as steel columns do, although they will resist failure longer than bare steel columns. Light metallic reinforcement in the protective concrete may be used, the reinforcement being

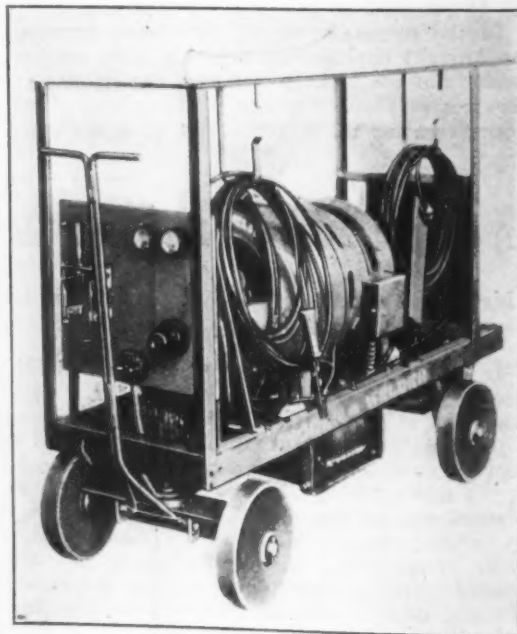
in the shape of expanded metal or similar material. This prevents the heavy spalling which would expose the interior or main reinforcement, and thus protects the latter. In case aggregates of the non-spalling class are used, the protective expanded metal member is unnecessary.

Failure of any such member depends upon both the intensity of the fire to which it is subjected and the duration of the subjection. A table is given showing the period of resistance, in hours, of various types of column structures made up with various forms of steel reinforcing and further protection. The resistance varies from 1½ hr. in the case of the most poorly protected specimens tested to 6 hr. in the cases of six of the specimens, these being the ones best designed and most adequately protected against heat.

Arc Welder for Railroad Shops

A portable electric arc welding machine of large capacity and designed especially for use in railroad shops, has been brought out by the Lincoln Electric Co., Cleveland. It is a 300-amp. machine and is furnished for any voltage. The stable-arc is employed.

The arrangement of the machine may be noted from the illustration. It is mounted on a riveted structural steel frame only 21-in. wide so that it can be moved through narrow aisles. Its weight is close to the floor to eliminate danger of the truck tipping over and at the back of the frame there is an extension to protect the welding unit. The wheels are 12 in. in diameter and are all steel, being made of disks to which the rims are welded. The wheels are mounted on roller



The Machine May Be Taken Through Narrow Aisles

bearings. The machine is adapted for welding locomotive frames, cross-head guides, truck sides, main driving wheels, journal boxes, brake levers, coupler shafts and other parts. It is stated that it will put on 7 to 10 lb. of metal per hour in building up cross-head guides and from 4 to 5 ft. of firebox seam can be welded per hour. The machine has a push button starter, convenient hooks for the cable, spring controlled truck handle and a waterproof cover which when dropped down affords protection from the weather. Its weight is 1800 lb.

Harry D. Carson and Don A. Marshall have withdrawn from Miller, Carson & Co., Inc., and have organized Carson, Marshall & Co., Inc., with offices in the Franklin Trust Building, Philadelphia. The company will conduct a general business in pig iron, coke and coal.

Methods of Welding Inspection

Practice of Various Industries in Testing Skill of Operators Reviewed at Welding Society's Annual Meeting—New Officers Elected

A TECHNICAL session devoted to a symposium on the methods followed by various industries in inspecting welds and testing and checking the skill of welding operators was an outstanding feature of the annual meeting of the American Welding Society, held April 22, 23 and 24 at the Engineering Societies Building, New York.

The meeting as a whole was well attended. New officers were elected, A. G. Oehler, *Railway Age*, 30 Church Street, New York, being the new president. George Bird, Bird-Potts Co., Atlanta, Ga., was elected to serve as vice-president, Southern division, and C. H. Smith, Linde Air Products Co., San Francisco, was elected vice-president, Pacific Coast division. Directors at large are James Burke, Burke Electric Co., Erie, Pa.; J. W. Meadowcroft, Edward G. Budd Mfg. Co., Philadelphia; S. W. Miller, Union Carbide & Carbon Laboratories, Long Island City, N. Y.; and H. A. Woofter, Thomson Electric Welding Co., Lynn, Mass.

Dr. C. A. Adams, professor of engineering, Harvard Engineering School, Cambridge, Mass., continues as president and W. Spraragen as secretary of the American Bureau of Welding, which is the research department of the American Welding Society. Dr. H. L. Whittemore, Bureau of Standards, Washington, and A. D. Risteen, director of research, Travelers Insurance Co., were elected directors of the welding bureau.

Progress reports were made at several committee meetings. The electric arc welding committee, headed by H. M. Hobart, General Electric Co., Schenectady, is making a comprehensive investigation to determine certain fundamentals of electric arc welding, such as the effect of various currents, angles of bevel, number of layers of deposited metal, and size of electrode. Test results were analyzed at a meeting of the committee. A sub-committee is carrying out tests on the arc welding of non-ferrous metals. The resistance welding committee, of which H. A. Woofter, Thomson Electric Welding Co., Lynn, Mass., is chairman, discussed the welding of special metals and it is hoped to gather considerable data on spot welding. The committee on specifications for iron and steel to be welded, headed by W. J. Beck, American Rolling Mill Co., Middletown, Ohio, have a definite program of investigation, upon which it will report later.

An educational committee has been formed with E. H. Ewertz, general manager Bethlehem Shipbuilding Corporation, Moore plant, Elizabeth, N. J., as chairman. This committee will work up fundamental data for the training of electric arc and gas welding operators.

An inspection trip to the Bayway plant of the Standard Oil Co. of New Jersey was well attended. The company's shops were visited and the application of welding in the construction of pressure vessels was inspected, as well as the welded joints on lines and headers that replaced the fittings formerly used.

Many Papers at Technical Session

More than 25 papers were prepared for presentation at the technical session. Most of the papers were brief, and several were preprinted.

In a paper on "Standardization in Welding," W. Spraragen, secretary of the American Bureau of Welding, expressed belief that too much responsibility has been placed upon the welder, and that the engineer has dodged his responsibility in the matter of design, technique to be employed and selection of materials. When these problems are worked out, he said, the welder is called upon only to manipulate the torch or electrode to do a particular job and after a little training can

be depended upon to do the work with less variation in quality than is found in riveting, providing there is a proper inspecting and supervisory force.

In discussing the testing of welds and welded products it was said that the testing is different for every industry. In some cases hydrostatic pressure can be applied and in others, blows of a hammer, soap solution, oil penetration and reduction of air pressure were said to be useful. In the majority of cases, however, tests of this sort are neither possible nor desirable. Where all of the variables, except the actual deposit of the metal, have been determined by competent engineers, the quality of the product will be known in advance. The skill of the operator can be tested and checked for the particular job at suitable intervals. Suitable inspection service, it was emphasized, should be given careful attention.

The inspection service should, it was stated, include checking whether all requirements preparatory to the welding have been fulfilled; whether suitable materials are being used; and include the method of depositing the metal. It should also be ascertained whether the correct current or size of torch tip is being used, whether the manipulation of the torch or electrode is satisfactory and whether the parts to be welded are free from foreign matter. Finally it should be known whether the proper penetration and fusion are being obtained. In some cases it might be desirable to have the welder stamp his number on the job, and in others the inspecting force might test specimens of the work to destruction.

The expertness of the operator in depositing the metal for the particular job can in most cases, it was stated, be determined only by physical tests to destruction of specimens of his work.

Meetings Helpful in Maintaining Quality

Inspection was held as an important factor in getting uniformly good welds by Jonathan Wolfe, assistant superintendent of track and roadway, Chicago Surface Lines, in a paper on the methods employed by his company in the carbon arc welding of rail joints. By frequent inspection and by discussion at the welding meetings, the knowledge and skill of the operators is being increased. The welds are inspected by the superintendent of welding and by the foreman, the latter also laying out the work and making daily reports of the work done. The welding meetings are attended by all division superintendents, welding foreman and operators, and at some of these meetings samples of welds, test pieces, etc., are shown, and methods are discussed. Instructions are issued covering future work and by means of the meetings the operators are brought in touch with each others' work. Helpers in each gang are trained by working under the supervision of a welding operator, and metallic process welders are advanced after serving an apprenticeship under the carbon operator. The skill of the operators is checked by the inspection of welding done by them and their work and also by the service record of the joints made by them, each operator being required to stamp an identification letter on the joint he makes.

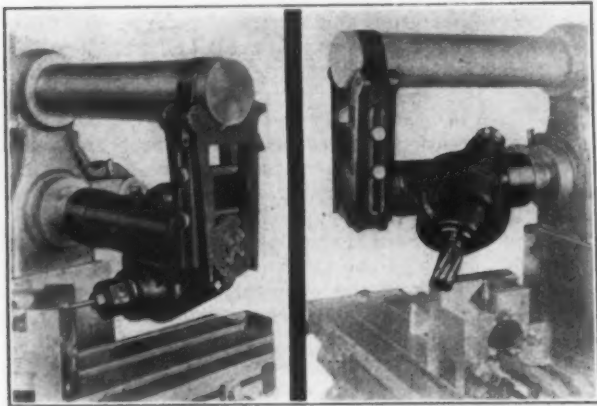
Rail joint welding was discussed also in a paper by H. M. Stewart, superintendent of maintenance, Boston Elevated Railway. Before men are assigned to regular joint welding they are instructed in the care and operation of welding machines and make up test joints under the direction of instructors. These test joints

(Concluded on page 1389)

Heavy-Duty Universal Milling Attachment

A universal milling attachment known as the No. 5 Hevy-Du-T, has been added to the line of the Porter-Cable Machine Co., Syracuse, N. Y. It is designed for making heavier cuts than possible with similar attachments previously marketed by the company and is recommended for irregular and intricate work requiring end mills up to 1½-in. in diameter.

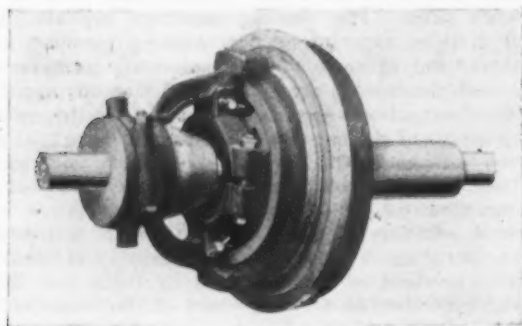
Like the No. 4 model, the new attachment is gear driven, but the ratio being only 1 to 1 there are fewer



gears. The reversing mechanism is not employed and the gears run in oil, which is stressed as assuring silent operation. When equipped with a boring head the device may be used to bore fixtures and drill jigs at any angle. It may be attached to any standard overhanging-arm milling machine and is driven by a taper arbor of suitable size for insertion in the spindle of the machine. The outer end of the frame of the device is secured to the overhanging arm by an adjustable clamp, as shown, and ease of mounting or removing the device is a feature. The drive arbor, intermediate shaft and gears of the attachment are of chrome-nickel steel and run in S. R. B. ball-bearing and Norma-Hoffman roller bearings. The spindle is pack hardened and runs in adjustable bronze bearings. A split draw-in collet for ½-in. shank end mills may be furnished. The weight of the attachment is 45 lb.

Medium and Light Duty Friction Clutch

Few parts and accessibility are features of the Lemley model F friction clutch illustrated, which is a recent addition to the line of the W. A. Jones Foundry & Machine Co., 4401 West Roosevelt Road, Chicago.



The principle of operation is simple and special tools are not required to adjust or disassemble the device. Uniform pressure on the friction surfaces at all times is claimed. The two toggles are adjusted at the same time by means of one split ring. Free floating friction rings of fiber or asbestos brake-lining material are employed. The device is furnished as sleeve clutches, cut-off couplings, or bolted to the arms of pulleys, gears or sheaves.

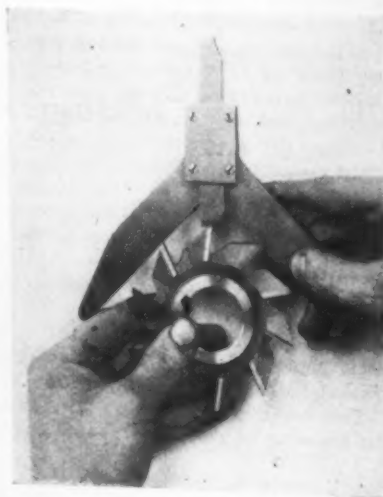
Scavenger Valve Prevents Compressor Explosions

A new type of scavenger valve for air receivers in compressed air plants was described by William F. Parish and William B. Smith-Whaley, of Parish & Tewksbury, engineers, 17 East Forty-second Street, New York, before the metropolitan section of the petroleum division of the American Society for Mechanical Engineers, April 9. It is generally conceded that air receiver and line explosions are caused by explosive mixtures due to air and the lubricating oil, but the trouble cannot be prevented through a control of the character of the lubricant, as such explosions are found to occur with either high or low flash point oils. These explosions will not occur, however, if air and oil vapors are prevented from forming combustible gases. Pockets and traps in the air line also can be guarded against.

As regards the receiver, means may be introduced for constantly scavenging the tank and thus preventing the accumulation of vapors. In the method described, which has been in use about seven years, a scavenging valve is employed, the air entering and leaving the receiver through the same opening. The mechanism of the valve allows the pressure to open a passage for the compressed air to the top of the tank. The outlet opening has fitted to it a length of pipe that goes to within a few millimeters of the bottom of the tank. Any air flowing from the pump or compressor to the air system, therefore, has to pass from the top of the tank entirely to the bottom before it can leave. This serves to sweep all vapors and gases from the receiver and keep it full of air with only a minute amount of oil and vapors that do not have a chance to collect and stratify. A valve of the type described is shortly to be placed on the market for use on air receivers.

Cutter Clearance Gage

A gage intended to aid in grinding the correct angle of clearance in milling cutters, and which may



be used for right and left-hand cutters and for end mills, is here illustrated.

The body, which is of V-shape, locates the cutter and holds the gage blade in correct relation to the center line of the cutter. All contact surfaces are hardened and ground. Two gage blades are furnished with each gage and cutters from ½-in. up to 8-in. in diameter and of any width may be measured.

In using the gage, the inside surfaces of the Vee are brought in contact with the cutter as shown, and the gage blade is dropped upon the tooth being checked. The cutter is then revolved sufficiently to bring the face of the tooth in contact with the gage blade. If ground correctly the angle of clearance in the tooth will correspond with the angle of the gage. The device is being marketed by the Brown & Sharpe Mfg. Co., Providence, and is designated as the No. 900.

Following Up Purchase Orders

International Petroleum Co.'s System Recognizes That Getting Goods Is Important Part of the Transaction

"A FOLLOW-UP system for purchase orders is almost as important as placing the business," said Byron C. Kitchen, assistant purchasing agent of the International Petroleum Co., Ltd., Toronto, Ont. "A buyer may drive a good bargain, and save money on a purchase, but unless the order is delivered within the time specified it may mean an ultimate loss to his firm. In buying, as in other things, it is results that count."

Many men are adept at making good purchases, and can obtain concessions that their less favored associates cannot get; but few, without the aid of a good follow-up system for their purchase orders, are able to get good deliveries of the material they have ordered. The Imperial Oil Refineries, Ltd., of which the International Petroleum Co., Ltd., is a subsidiary, has evolved in the general purchasing department after years of experimentation a very efficient system of tracing orders.

Including the purchasing agent and his assistant there are nine buyers, and a total staff of 30 employees. This department must provide for all of the needs of six refineries, 14 central marketing stations and all of the small stations in Canada, as well as two refineries, three drilling fields, and marketing stations in the South American countries of Chile, Colombia, Peru and Ecuador.

When an order is sent out, an exact copy of it is given to one of the clerks whose sole duty is to follow up orders. On the bottom of this order is noted by the buyer the date on which delivery of the goods should be obtained. If there is no particular importance for quick delivery, the clerk makes an entry in a monthly diary on a date a day or two following that on which the goods should be shipped. Say, for example, an order is given to a firm in Montreal for some oil cans to be delivered to Winnipeg on April 1. Allowing time for the documents to come through the mail from Montreal, the clerk makes his entry in his book for April 3. If upon looking over the entries for that date he finds that documents have not been received and that apparently shipment has not been made, he sets in motion the tracing system.

A printed blank is mailed out. On this are listed a number of questions, and the clerk indicates at the top of the form the questions that he desires to have answered. In this case it would be questions No. 1 or No. 2, "When was order shipped," or "If not shipped, when will you ship?" Then the clerk makes another entry in his diary, say on April 7, which allows time for a reply. If the papers have not been received by that date, or a good explanation received, another form

is mailed out indicating questions No. 4 or No. 22. In the case of very urgent orders the purchasing agent may retain a copy of the order and urge delivery with personal letters. However, the form letter has been found successful. An executive of a large manufacturing concern with which Imperial Oil Refineries, Ltd., does a large business said to the writer:

"When we see one of the follow-up letters come in we know that it means business and make haste to deliver their order, or give them a plausible reason for not making delivery."

From the many other questions printed on the form it can be seen that it has other uses than to hasten shipment.

It is far less costly and more simple than to dictate a separate letter for each order, and to judge from the attitude of the firm mentioned above, the results are just as satisfactory.

Revolving distributors of the McKee type will be installed by the Carnegie Steel Co. on Carrie blast furnaces Nos. 1 and 2 at the Homestead Works. The order for the distributors has been placed with Arthur G. McKee & Co., engineers and contractors, Cleveland, who will also furnish three double hopper larry cars each of 300 cu. ft. capacity for use with the Carrie furnace storage bin system which is being reconstructed and provided with bin bottoms of the Baker type.

The Yolande Coal & Coke Co. announce developments to begin at once on coal lands at Connellsville, in the lower part of Jefferson County, Ala., a big shaft to be opened and the Blue Creek coking coal to be mined, \$300,000 to be expended on the development.

For following up purchase orders when deliveries seem uncertain, a printed letter-size sheet is used with a list of questions introduced as shown immediately below.

Subject.....

Dear Sirs:

Please furnish information or comply with requests indicated by No..... using space below for reply. This form must be returned if letter is written in reply giving particulars requested.

- 1 When was order shipped?
- 2 If not shipped, when will you ship?
- 3 When will you ship balance due on above order?
- 4 This is second request for information regarding shipment of above order. Please give immediate attention.
- 5 Render invoices in triplicate.
- 6 Send Customs invoices in triplicate, two of which must be certified.
- 7 Render invoices in septuplicate.
- 8 Send packing lists in quintuplicate.
- 9 Show on invoices or packing lists, gross, net and tare weights in pounds and kilograms.
- 10 Show package markings on invoice.
- 11 Show customs declaration in Spanish (as given on order) on invoices.
- 12 Send Bill of Lading or Express Receipt to this office.
- 13 Show separate prices for each item.
- 14 Should not price read.....
- 15 Unable to locate on order the..... item on your invoice.
- 16 Give correct order number.
- 17 We passed invoice dated..... amount..... covering this material. Explain attached.
- 18 Render separate invoice for each consignment.
- 19 You have not deducted freight allowance.
- 20 Give invoice reference on attached expense bill.
- 21 Your invoice of..... being held pending receipt of expense bill.
- 22 Have not received reply to my letter of..... on above subject. Please advise.
- 23 Remarks:—

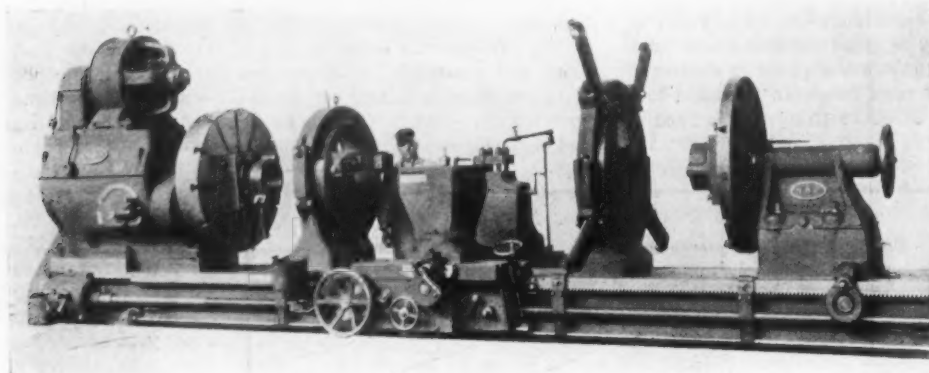
Heavy Lathe with Special Attachments for Turning Crankshafts

A 48-in. heavy lathe with special attachments for turning both single throw or multi-throw crankshafts has been designed recently by the Niles-Bement-Pond Co., 111 Broadway, New York. The machine is claimed to reduce the time required for setting and machining such shafts and to assure greater accuracy.

The lathe is driven by an adjustable-speed motor which is mounted on the headstock as shown. Four mechanical speed changes are provided, and these in connection with the speed range of the motor, give a range of face-plate speeds that is ample for any work

ings being used in the drivers to protect the shaft. The drivers may be rotated on the slides to provide angular adjustment for multithrow crankshafts. They are accurately located by index pins and locked to the slides by large clamping bolts.

The pin which is being turned is supported by a steadyrest secured to the crank cheek and rotating in a bearing which is bored in accurate alinement with the spindles. This is intended to increase the accuracy and production by insuring freedom from chatter and springing of the crank. Another steadyrest with offset ring rotating in jaws is used in addition to the rotating steadyrest when turning multithrow crankshafts. This may be used with the ring or with the



The Special Attachments Are Intended to Reduce the Time for Setting and Machining the Crankshafts. The attachments may be removed and the machine used for general lathe work

within the capacity of the machine. Gears in the headstock are of steel, and all bearings are bronze lined. A pressure pump provides continuous oiling for the gears and bearings.

Auxiliary face plates are provided on the headstock and tailstock and have index pins for exact alinement when setting work in the lathe. Each face plate has a screw adjusted slide which is graduated for different distances between the centers of the shaft and the crankpin. Tapered pins are provided to prevent movement of these slides after adjustment for a given crank. On each slide is fitted a clamping driver in which the end of the crankshaft is held, split bush-

jaws only, as required, for turning pins or journals.

On the front of the carriage there is a three-position turret tool post with positive locking index pin and clamping bolts. On the back of the carriage is mounted a plain tool post with laterally adjustable tool slide. This is used for turning the ends of the crank cheeks when the rough turning is being done on the journals. A motor-driven pump on the back of the bed supplies coolant for the cutting tool, the coolant being drawn from a tank in the floor. The special attachments for crankshaft work may be removed conveniently and the machine used for general lathe work.

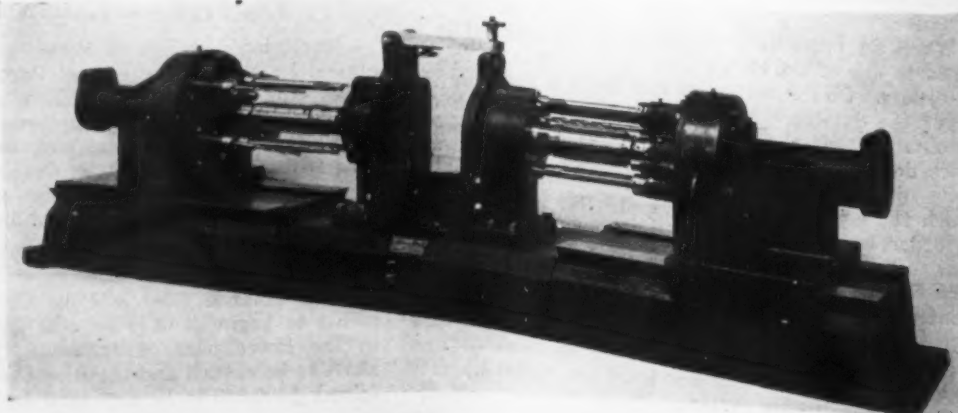
High-Production Transmission Case Boring

As an illustration of the ever present effort to meet rising costs of manufacturing by reducing the price of product, an accurate and rapid method for drilling, rough boring, size boring, and reaming of transmission cases, which has been developed by the Hoefler Mfg. Co., Freeport, Ill., is shown. For this case a long sub-base was made to rest on the table of the ordinary standard, two-spindle horizontal drilling machine. It is carried on a three point support to make sure of alinement. A pair of adjusting screws in the center serves to prevent any difficulty due to loading and unloading the jig, which is placed in the center of the bed.

The jig locates the transmission case on four hardened surfaces. In two of these are dowels to conform to the locating holes in the finished surface of the case, so placed that when the clamp with its equalizer holds down the piece there is no opportunity to draw the case out of line or spring it. The two uprights on the jig carry an extra long bearing, hardened and ground steel bushings to guide the various bars and the drills. This is necessary to hold the case to the close limits required to secure ease of assembly and quietness in operation.

The design of the tools presented an interesting problem, because it was desirable to complete the operations of rough boring, size boring and reaming in one pass. Because the parts to be bored are of comparatively short length, it was possible to place the three

Machine Arranged for Rapid Drilling, Rough and Size Boring, and Reaming of Transmission Cases



tools, consisting of rough borer, size borer and reamer, successively on the same bar, ahead of the pilot and, by interlocking them, to provide an adequate drive. As each tool clears before the next enters, and as the pilot is large in diameter, and long, no difficulty has been experienced from a tendency of the tools to float, but it was found, by careful inspection, that alinement was maintained. This pilot is made up of hardened and ground steel strips, giving chip clearance and reducing the friction surface between bar and bushing.

On the bed are ways on which the two auxiliary heads travel. Extra long bearings are provided for the heads on these ways to insure maintenance of the accuracy of the equipment. Owing to the many sizes

of tools, ranging from 21/64-in. drill to the 2.836-in. boring bar, and also to the close centers as shown, it was necessary to resort to a clever arrangement of gears inside the head in order to maintain the proper surface speeds proportional to diameters. In one particular case, for instance, while the center bar was operating at 130 r.p.m., the 21/64-in. drill was operating at 1200 r.p.m. These various tools are driven by broadfaced hardened gears cut with stub form teeth, integral with the hardened and ground shafts, and running in non-gran bronze bushings and supported with ball thrusts. Twenty-nine operations, consisting of drilling, rough boring, size boring and reaming, are performed simultaneously.

MACHINERY EXPORTS

Increase in March 55 Per Cent Over February and 34 Per Cent Over March, 1924

WASHINGTON, April 27.—Making an advance to \$35,962,076 in March, as against \$23,215,776 in February, the export movement of machinery was sharply stimulated. The increase in March of this year was little more than \$9,000,000 over the exports for the same month of last year, while for the nine months of the current year machinery exports, valued at \$241,782,872, also reflected an increase of a little more than \$9,000,000 over exports for the corresponding period of last year, when they were valued at \$232,458,187. Exports of metal-working machinery in March totaled 5295 in number, valued at \$1,364,930, making a marked gain over exports of this class of machinery in February, which numbered 2905, with a value of \$707,445.

Imports of machinery in March of the present year were valued at \$999,237, as against \$892,094 in February. Of the imports in March of the present year agricultural machinery and implements, valued at \$359,337, constituted the principal item.

Exports of locomotives in March of the present year, valued at \$409,292, included shipments of loco-

motives to Canada valued at \$62,025; Mexico, \$41,556; Cuba, \$36,830, and Brazil, \$21,357. Of the exports of sewing machines in March, valued at \$895,031, shipments to the United Kingdom were valued at \$324,977, and to Mexico, \$126,048. Exports of typewriters in March were valued at \$1,582,456, shipments to the United Kingdom being valued at \$281,133, while those to France were valued at \$163,667, and to Italy \$106,134.

The United Kingdom was the principal market for American printing presses, shipments to that country in March being valued at \$148,181. Japan ranked second with \$142,584, while those to Canada were valued at \$78,433, and those to Australia at \$111,069. Harvesters and binders to the value of \$282,815 were exported to France in March, while the value of this class of shipments to Denmark was \$128,896, and to Belgium, \$35,106. Russia was the chief destination of exports of lathes in March, taking 72 machines valued at \$61,052, while Italy took 20 machines, valued at \$48,372; the United Kingdom took 13 machines, valued at \$32,172, and while Brazil took only four machines, they were valued at \$25,434.

Machinery Exports from the United States (By Value)

United States Metal-Working Machinery Exports

	March, 1925		February, 1925	
	No.	Value	No.	Value
Lathes	199	\$261,593	85	\$138,080
Boring and drilling machines	61	60,582	110	51,029
Planers, shapers and slotters	39	76,773	21	34,033
Bending and power presses	51	74,412	15	12,368
Gear cutters	48	84,196	43	98,980
Milling machines	131	227,121	31	44,018
Thread-cutting and screw machines	70	89,007	41	32,807
Punching and shearing machines	19	20,420	20	5,793
Power hammers	17	23,963	30	12,657
*Sharpening and grinding machines	200	312,495	92	182,345
Chucks, centering, lathe, drill and other metal-working tools	3,221	36,509	1,338	18,950
Pneumatic portable tools	1,239	97,959	1,079	76,385
Total	5,295	\$1,364,930	2,905	\$707,445

*External and internal grinding machines only; "other sharpening and grinding machines" are reported now by weight instead of by number.

Imports of Machinery Into the United States (By Value)

	March		Nine Months Ended March	
	1925	1924	1925	1924
Metal-working machine tools	\$38,573	\$26,527	\$205,444	\$294,001
Agricultural machinery and implements	359,337	179,842	1,842,257	1,750,411
Electrical machinery and apparatus	101,327	33,810	1,242,065	205,890
Other power generating machinery	53	.....	28,486	480,326
Other machinery	363,710	308,519	2,976,482	2,555,199
Vehicles, except agricultural	136,237	183,003	1,162,313	1,778,801
Total	\$999,237	\$731,701	\$7,458,047	\$7,164,628

	March, 1925		March, 1924		Nine Months Ended March, 1924	
	1925	1924	1924	1924	1923	1924
Locomotives	\$409,292	\$171,000	\$5,545,006	\$3,182,112		
Other Steam Engines	289,313	42,884	1,417,318	846,909		
Boilers	307,365	80,065	1,419,185	1,426,850		
Accessories and Parts	199,102	214,778	1,388,139	3,179,235		
Automobile Engines	1,985,780	539,990	6,151,434	3,331,128		
Other Internal Combustion Engines	620,357	466,168	5,120,221	4,089,348		
Accessories and Parts for	240,772	443,239	2,478,947	2,727,624		
Electric Locomotives	21,127	33,622	1,380,060	1,397,714		
Other Electric Machinery and Apparatus	1,219,421	772,770	5,450,062	6,940,055		
Excavating Machinery	228,917	111,061	1,629,193	1,350,912		
Concrete Mixers	59,780	47,406	806,820	422,672		
Road Making Machinery	147,725	70,441	823,337	739,437		
Elevators and Elevator Machinery	182,125	267,906	1,431,355	3,424,431		
Mining and Quarrying Machinery	1,023,199	2,341,526	7,320,103	8,316,209		
Oil Well Machinery	1,026,577	2,460,174	5,197,343	5,210,171		
Pumps	683,639	662,315	5,115,082	5,840,512		
Lathes	281,563	70,937	1,186,253	980,868		
Boring and Drilling Machines	60,582	43,922	544,137	534,568		
Planers, Shapers and Slotters	76,773	22,725	270,442	206,419		
Bending and Power Presses	74,412	25,609	619,732	289,535		
Gear Cutters	84,196	68,623	427,761	274,166		
Milling Machines	227,121	20,680	822,221	230,412		
Thread Cutting and Screw Machines	89,007	41,566	455,512	512,731		
Punching and Shearing Machines	20,420	1,940	107,349	100,302		
Power Hammers	23,963	14,494	189,568	137,139		
Sharpening and Grinding Machines	312,495	128,102	1,640,901	874,217		
Other Metal Working Machinery and Parts of	530,628	328,545	3,391,863	3,259,072		
Textile Machinery	1,063,916	672,819	7,115,020	6,200,543		
Sewing Machines	866,031	722,786	5,581,743	7,630,123		
Shoe Machinery	134,748	81,965	1,164,470	907,099		
Flour-Mill and Grindmill Machinery	84,146	56,874	870,719	908,707		
Saw-mill Machinery	357,849	237,864	2,676,222	5,860,218		
Paper and Pulp Mill Machinery	109,837	129,675	1,241,377	1,480,400		
Sawmill Machinery	91,580	34,162	596,986	690,321		
Other Woodworking Machinery	98,513	111,254	684,329	906,510		
Refrigerating and Ice Making Machinery	297,010	200,164	1,443,470	751,009		
Air Compressors	268,904	215,221	2,213,034	2,191,940		
Typewriters	1,582,456	1,290,714	12,027,404	10,569,766		
Power Laundry Machinery	84,622	88,126	608,200	690,321		
Typewriting Machines	283,673	272,410	2,597,670	3,094,379		
Printing Presses	692,064	378,079	3,990,170	3,775,831		
Agricultural Machinery and Implements	7,515,871	5,822,255	43,381,192	42,470,941		
All Other Machinery and Parts	11,888,150	6,827,725	88,329,297	83,406,274		
Total	\$35,962,076	\$30,739,004	\$241,782,872	\$222,406,197		

"MASTER BRAND" SHEETS

Manufacturers' Plan to Insure a Standard Amount of Zinc Coating

Specifications covering what is known as the "master brand," the stenciling that is to distinguish the sheet steel of those manufacturers participating in the Sheet Steel Trade Extension Committee from the products of other manufacturers, have been formulated and adopted by that committee and by the sheet manufacturers subscribing to and cooperating in the activities of the committee. These manufacturers represent 92 per cent of the independent capacity of the United States and 68 per cent of all of the sheet making capacity of the country. The headquarters of the committee are in the Oliver Building, Pittsburgh, and C. L. Patterson is secretary.

While its form and design are yet to be developed, the brand will be uniform for all companies licensed to use it, as will be the color of ink to be used. It can be used only on the prime sheets of the participating companies and absence of the brand from a sheet thus automatically identifies it as a "second" or a "waster." The base metal shall be iron or steel and a copy of its analysis shall be filed with the committee and be subject to its approval as there is a standard analysis that must be met to secure for the sheet maker the right to use the brand. On copper-bearing steel, use of the brand is conditional on the observance of definite minimum limitations as to the amount of the copper content.

The brand is not permitted on galvanized sheets of less than No. 28 gage. The intent of this restriction is the elimination of Nos. 29 and 30 gage galvanized sheets for roofing, the use of which is believed to have resulted in so many failures in that particular service and to have opened wide the gates for the use of substitute roofing materials. The weight of the coating of master brand galvanized sheets must be the heaviest in each gage that is possible without peeling

or scaling. In determining whether the coating is up to the standard, tests will be made in the field and in the shop. The test is to be by spot weight from chemical analysis.

Inspectors at Sheet Mills

This means the appointment of inspectors, who will make cuts from the sheets and send them to the committee, which will then send them to a testing laboratory. The spot weight test by chemical analysis provides for the taking of three specimens, 2¼-in. sq., one cut from the center of the sheet and the others from diagonally opposite corners at least 4 in. from the end and 2 in. from the side. The test of these pieces will be made with basic lead acetate, hydrochloric acid, antimony chloride or sulphuric permanganate.

Another stipulation in the use of the brand is that it cannot be applied to or used on galvanized sheets made by the so-called tight coating process. It is provided further that any manufacturer licensed to use the brand who is found to be a persistent offender against the standard regulations, shall be deprived of the right to use the brand.

It is quite evident from this statement concerning the brand and its intents that the trade extension committee is making an earnest effort to win back to steel the markets lost to substitutes in recent years. It is realized that the loss of certain markets has been due to a letdown by manufacturers in the matter of quality and that there was no greater leak than through the manufacture and sale of galvanized sheets of lighter than No. 28 gage. The lighter sheets would not stand up as a roofing material and their failure led to a considerable substitution of compound roofing material. The master brand cannot be stenciled on these light gage galvanized sheets, and there is the additional safeguard to the user in the fact that the brand means a coating as heavy as is consistent with freedom from scale or peeling under fabrication. Moreover, the brand identifies the sheets as prime product, since it cannot be applied to seconds and wasters.

GARVIN MACHINE CO. SOLD

Its Various Machine Tool Lines Will Be Continued by Purchasers

One of the best known landmarks in the metal working industries has been swept away by the ebb-tide in business that followed the war. The Garvin Machine Co., Spring and Varick Streets, New York, this week sold all assets and its passing into history now awaits only the formal action of its stockholders.

For sixty years the Garvin name has been familiar to makers and users of machine tools. Founded in 1865 as the partnership of Smith & Garvin to make lathes and milling machines in a little shop in downtown New York, its expansion soon showed the need for larger quarters. The shop accordingly was moved to what was then Bricksburg, now Lakewood, N. J., and business increased. In view of later developments, it might have been better had the concern stayed in its small-town environment. But in New York at that time were cheap labor, better shipping facilities and a larger immediate market. So in 1879 Hugh R. Garvin, having taken over the control of the company, moved it to 139 Center Street, New York, formed a firm with his eldest son as partner and increased the business considerably. E. E. Garvin & Co. prospered for ten years at the Center Street plant, the rapidly growing textile demand being reflected in a corresponding activity in the machine tool business of that time.

In 1889 the firm was incorporated as the Garvin Machine Co., and new quarters were taken at Laight & Canal Streets, New York. New lines had been added

and New York was a leading center of machine tool manufacture. Rents were still low enough to be of only minor importance and the demand continued active. George K. Garvin, brother of E. E. Garvin, had succeeded by this time to the active leadership in the company, Hugh R. Garvin having died the previous year. In 1896 a disastrous fire destroyed the Canal Street building and the company moved to its present location at Spring & Varick Streets. E. E. Garvin continued as vice-president until he died in 1916 and George K. Garvin was active until his decease in 1919. The control of the company then passed to the hands of Hugh Roy Garvin, the present president.

Business during the five years prior to the war averaged perhaps \$300,000 a year, but with the war demands came a sudden expansion until more than \$2,000,000 worth of machine tools were sold in 1916. While war demand continued, profits were ample, but with the slump which followed trouble began.

A great majority of machine tool builders were operating in sections of the country where rents were considerably lower than those in New York; moreover, the manufacture was usually on one or at most two floors, so that handling and labor costs were minimized. Although the New York plant of the Garvin Machine Co., occupied more than 100,000 ft. of floor space, this area was on nine floors of a loft building, necessitating repeated handlings and high labor and overhead charges. The early advantages of excellent labor conditions and shipping facilities had disappeared with the passage of the years, competition was very severe and orders few and far between. By 1921 the volume of business had dropped to the \$300,000 level again, and there it has remained ever since. There was no

question as to quality of product, but even the manufacturer of Emerson's famous mouse-trap would have found few footsteps treading his pathway under the conditions that existed.

About a year ago the banks, which held approximately \$340,000 in notes of the company, stepped in and as a result George H. Frew has been acting as manager of sales in the interim. Conditions in the industry did not improve enough to permit much recovery, nor did the disadvantages of the New York location diminish. Accordingly, the assets of the company were auctioned off last week.

The tapping machine line was purchased by the Western Machine Tool Co., Holland, Mich.; the duplex

drill line was taken over by the National Automatic Tool Co., Richmond, Ind.; the screw machine lines and the grinder unit went to John B. Stevens, Inc., New Haven, Conn. The air-chuck line will be handled hereafter by the Skinner Chuck Co., New Britain, Conn., and the duplex milling machine by Joseph H. Beals & Co., Boston, Mass., while the plain and universal milling machine lines were sold to H. Leach, Providence, R. I.

Mr. Frew will take over the hand milling machine and will be at the present address of the company for some time. Mr. Garvin has received several offers from corporations in the metal working industry, but has not decided which he will accept.

New England and Foreign Trade

Many Problems Considered at Conference and Means of Increasing Exports Are Suggested

FOREIGN trade in all its phases was comprehensively covered in the two-day session of the New England Foreign Trade Conference held Wednesday and Thursday, April 29 and 30, at Providence, R. I., which was attended by approximately 200. Although organized as a New England affair, the questions considered had no direct bearing on any one section of these United States. The foreign trade committee of the Providence Chamber of Commerce was responsible for the benefits derived from this conference.

For the most part, the chief speakers were Government officials. So far as the iron and steel industry is concerned, the iron and steel division, Bureau of Foreign and Domestic Commerce, represented the Government and the industry at large. But that representation, as well as that of other industries, lost its identification, to a certain extent, in the broad dealing of the export question. Rather, it was a general summing up by authorities of conditions in foreign countries from a business standpoint; and the many technicalities involved in the export field. No one branch of American industry was particularly singled out, nor were specific statements made along trade lines.

The opinion was expressed that with general plant capacity in this country presumably greater than home needs require, the export field is the only logical one for sufficient business to insure steady operations by our industries. But, according to one speaker, if American exporting is to thrive we must consider the feelings of our foreign customers as we do those at home. One reason why our export business has not grown more is that the foreign customer often is left unsatisfied. There is a certain indifference among American manufacturers to foreign business because of the legal processes involved and the many papers required. Large as well as small American concerns are inclined to ignore foreign markets because of these requirements. On the other hand, German and English business firms are keenly alive to the importance of detail required in foreign business; are willing to take the trouble to conform to all rules of international exchange, and are recovering foreign markets much more readily than our business interests.

The significance of export business was clearly brought out by the presentation of figures showing our exports for March aggregated something like \$452,000,000, or \$144,000,000 more than for the corresponding month last year. In connection with these figures it was stated that the Department of Commerce is receiving an average of 13,000 requests per week for lists of foreign dealers. In the 1924 fiscal year such requests totaled 417,000, whereas in 1922 they did not come up to 67,000.

Four very good points to be followed by those desiring to engage in the export business were advanced.

First, proper representation in foreign markets must

be maintained. Much foreign business has been lost by our industries because of misrepresentation. It is preferable to have Americans represent American industries.

Second, to succeed abroad, credits must be carefully attended to. Credits must be advanced where competition from foreign manufacturers is keenest, credit of the most liberal character.

Third, foreign customers must be accorded the same consideration as domestic. After all, a customer is a customer, no matter in what corner of the world he happens to do business.

Fourth, American business must avail itself of Oriental markets and not confine its activities to South American and European customers. It was apparent from statements made by those in a position to know, that proper arrangements will be made in this country for extended foreign credits when export business demands them.

It was asserted that one of the outstanding reasons for our difficulties in doing foreign business apparently lies in the fact that exporters have disposed of problems through the medium of casual correspondence. If we are to succeed in foreign fields, we must not allow correspondence with customers abroad to rest on the shoulders of the stenographic clerk. A misworded bit of correspondence often can upset the most important plans for foreign sales.

Again, in foreign trade it is impossible to determine the financial status of a customer by merely referring to Bradstreet or Dun, as is done at home. It is possible to secure from an exchange with exporters themselves direct and accurate information on credit of foreign houses.

M. H. Baker, general sales manager, American Manufacturers' Foreign Credit Underwriters, explained in some detail the workings of his organization. It is non-profit making, cooperative. Any firm desiring to become a member is carefully investigated, and if subsequently found undesirable is promptly suspended.

It was brought out that bankers in this country have the greatest confidence in Europe's ability to come back and in the selection of Germany's new President. But it was clearly pointed out that we, as a country, are facing a big problem in our export business because we have become the world's greatest creditor. It is a question among banking houses whether we should go on extending our credit abroad if we are to increase our export business. Europe, it appears, owes us today something like \$17,000,000,000, including war debts.

The Alabama Mining Institute will make a display at the Southern Exposition to be held in New York beginning May 10 and continuing 10 days, samples of coal and coke to be shown. The Tennessee Coal, Iron & Railroad Co. and other corporations also will display.

Pittsburgh Coal Co. Closes Five More Mines in Pittsburgh District

The Pittsburgh Coal Co. has closed five more of its mines in the Pittsburgh district. This brings the total of recently closed mines to 11 and leaves this company with only six of its union mines in operation. The mines at which work has been stopped had 1822 men on their payrolls. Suspension, T. M. Dodson, vice-president in charge of operations, says in a letter to the men, is because they cannot be operated under the present union wage scale and meet the competition of lower cost coal from non-union fields. The company is not willing, he says, to continue to operate at a loss.

The closing of the Mansfield mine at Carnegie, Pa., will cut off a payroll averaging \$60,000 per month and throw 400 men out of work. This mine has been noted for its steady operation, through dull times and good. Car shortage, strikes and holidays alone have caused loss of work at this mine for many years. Fifteen years ago, in 1910, the production was 503,556 tons, and that figure was almost equaled last year, when 452,206 tons were mined.

Program of Meeting of American Iron and Steel Institute

The twenty-seventh general meeting of the American Iron and Steel Institute will be held at the Hotel Commodore, New York, Friday, May 22. The address of the president, Elbert H. Gary, will be, as usual, the opening feature and will be followed by an address on "Industrial Progress in China" by Dr. C. T. Wang, former acting Premier and Minister of Foreign Affairs, Republic of China. The following papers will then be read:

"Steel Castings," W. J. Corbett, industrial engineer, Electric Steel Founders' Research Group, Chicago.

"Steel Construction," Lee H. Miller, chief engineer, American Institute of Steel Construction, Cleveland.

"Classification of Carbon Steel Billets," Charles O. Hadley, general manager of sales, Alan Wood Iron & Steel Co., Philadelphia.

"Blooming Mill Design and Practice," W. H. Bailey, Illinois Steel Co., Chicago.

"Water-Cooled Furnace Walls," H. D. Savage, vice-president Combustion Engineering Corporation, 43 Broad Street, New York.

To Erect Casting Plant

The Flint Malleable Castings Co., 318 Dryden Building, Flint, Mich., recently organized, has let contract for the erection of a plant and operations will be started about Aug. 1. Only the first unit will be built this summer. It will have melting capacity of about 10,000 tons per year. Its location is in the south end of Flint on the Pere Marquette Belt Line. Inquiries are now being made for machinery and equipment.

Sufficient financial resources have been secured to bring the project to completion and it is expected that about this time next year the company will be planning on the second unit. J. M. Barringer is president.

Railroads Petition for Higher Freight Rates, South and West

WASHINGTON, May 5.—The first formal step on the part of Western railroads to obtain greater revenue is now under consideration by the Interstate Commerce Commission. It is in the nature of a petition filed last week with the commission. The railroads include those from the Mississippi River to the Pacific Coast and to the Gulf of Mexico. Manifestly the proposal means higher freight rates on iron and steel products and all products entering into their manufacture along with all other products. It is contended in the petition that since the passage of the transportation act of 1920 the petitioning railroads have not earned a fair return upon the aggregate value of their property. Contention is made that for the period 1921-1924 the average rate of return was only 3.55 per cent and that the rates "yielding such low returns were and are confiscatory."

The assertion is made that the credit of these railroads has been impaired and that it is impossible to procure necessary capital by the sale of stock or to obtain money by the issue of bonds under reasonable terms. The petition makes an urgent request for an immediate increase in revenues, "which should become effective with the least possible delay."

Central Mississippi Valley Foreign Trade Conference

ST. LOUIS, May 5.—Trade experts from all sections of the United States are being invited to the second Central Mississippi Valley Foreign Trade Conference, which will be held under the auspices of the Department of Commerce, in the auditorium of the St. Louis Chamber of Commerce, May 21 and 22. Prominent export managers, bankers, economists and Government trade advisors will show how and where sales can be increased.

G. A. O'Reilly, vice-president of the Irving Bank-Columbia Trust Co., will discuss trade expansion in the Far East, and A. B. Dod, export manager for Merck & Co., will lead the round-table discussion of exporters. Carlton Jackson, American commercial attaché at Havana, Cuba, and Alexander V. Dye, holding a similar position in Mexico City, will discuss business conditions in those countries.

Walter H. Rastall, chief industrial machinery division, and R. A. Lunquist, chief electrical equipment division, United States Bureau of Foreign and Domestic Commerce, are among the speakers. "The United States and Soviet Russia," will be discussed by Rev. Fr. Edmund A. Walsh, S. J., regent of the Georgetown University School of Foreign Service in Washington.

Steel Corporation Officials Inspect Properties in Birmingham District

BIRMINGHAM, ALA., May 5.—Inspection of properties of the Tennessee Coal, Iron & Railroad Co., subsidiary to the United States Steel Corporation, was given as the object of the visit to the Birmingham district of Judge E. H. Gary, chairman of the board of directors and finance committee and chief executive; James A. Farrell, president; Richard V. Lindabury, general counsel and William J. Filbert, comptroller, the inspection beginning Saturday and continuing through Wednesday of this week. The first day of the visit was spent on the new elevated railroad of the Tennessee company which spans the valley between the steel mills at Fairfield and the top of Red Mountain, whence come the ores for the company.

All properties are to be viewed before the party returns. A dinner was tendered Judge Gary, President Farrell and others of the party Monday night by George Gordon Crawford, president Tennessee Coal, Iron & Railroad Co., to which were invited industrial leaders and prominent citizens of the district.

This is the fifth visit by Judge Gary to the Birmingham district. Mr. Farrell and Mr. Filbert have been here before and Mr. Lindabury is on his first trip. Among other sights taken in was a trip on the Federal barge line on the Warrior River in one of the Government steel boats.

Contracts with Branch Managers

Systematic study of business matters has been made by the Metropolitan Life Insurance Co., New York, in connection with its group insurance problems. Much of the information thus gleaned has been made public in the form of pamphlets or otherwise. An analysis of branch managers' contracts, with particular reference to methods of compensation, forms the subject of a 24-page pamphlet, which is available to any one interested. This is the second pamphlet dealing with methods of compensation. The first covered salesmen in manufacturing and wholesale establishments. A third will discuss retail clerks and a fourth factory workers. All are based upon surveys made by competent observers and covering a wide territory.

Steel Industry War-Time Earnings

Four-Year Average of 20.2 Per Cent Heavily Cut Into by Taxes

—Large Integrated Companies Earn Less Than Smaller Companies—Pig Iron Less Profitable Than Steel

WASHINGTON, April 24.—The Federal Trade Commission today sent to the Senate and House of Representatives (not now in session) its report on war-time profits and on costs in the steel industry, with supplementary data covering operations for 1920, the collection of which was accomplished only in part. The text of the letter of submittal follows:

Most of the information contained in this report was secured during the war for the use of the War Industries Board in its regulation of prices. Some additional information on costs in 1920 was obtained in an inquiry undertaken in consequence of a special appropriation of Congress, in connection with its various efforts to reduce an abnormal rise in prices.

The iron and steel industry is highly developed in the United States, but nearly one-half of the total production is under the control of one organization, the United States Steel Corporation, which was formed in 1901 through the merger of a number of earlier combinations. The United States Steel Corporation is the principal factor in each of the more important branches of the steel industry. Next in size is the Bethlehem Steel Corporation, which recently absorbed two other large eastern steel makers, the Midvale Steel & Ordnance Co. and the Lackawanna Steel Co. There are several other important steel companies, besides numerous small companies.

The profits and costs of the steel companies are closely involved with the extent of their investment and operations in successive stages of the industry, such as iron and coal mining, transportation and iron and steel manufacturing. Low costs of production do not always correspond with high rates of profit, because low costs may be the consequence of comprehensive investment rather than of superior management.

War-Time Earnings of the Steel Industry

The earnings of most of the steel companies were reported to the commission for the four war years, 1915 to 1918. The Steel Corporation has itself published its earnings. An analysis of all these data shows that the average earnings of these steel companies, before the payment of bond interest or Federal taxes on income or excess profits, were 7.5 per cent of the investment in 1915, 21.7 per cent in 1916, 28.9 per cent in 1917, and 20.1 per cent in 1918, with a four-year average of 20.2 per cent. Federal taxes took a large part of these profits, of course, in 1917 and 1918. In this computation the investment is taken as the aggregate amount of stocks, bonds and surplus.

All of these steel companies, except the Steel Corporation, were grouped, for purposes of comparison, in four classes, according to the completeness of their "integration," that is, the extent to which their operations embraced the successive stages of production from mining iron ore to rolling steel. These classes were as follows: Class I, companies using chiefly their own output of iron ore and coke; class II, companies beginning operations with the making of pig iron; class III, companies beginning with the manufacture of steel; and class IV, companies beginning with the rolling of steel products. The average earnings for the four-year period, 1915 to 1918, for each of these classes were as follows: Class I, 21.9 per cent; class II, 24.5 per cent; class III, 36.2 per cent; and class IV, 36.8 per cent. The more completely integrated companies had in each instance a lower average rate of earnings than those with less comprehensive operations.

With these various classes of companies may be compared the average earnings of the Steel Corporation before the payment of bond interest or Federal

income and excessive profits taxes, as deduced from its published reports, namely, 18.2 per cent on the capital stock, bonds and surplus (including certain reserves, etc., treated as surplus) for the same four-year period. This is a lower rate of profit than the average rate for any of the four classes of steel companies, as stated above.

Making comparison of the rates of earnings for the companies within the different classes, it is found that those with investments of medium size show in general the highest rates of earnings, and the smallest companies generally show higher rates than the largest companies. These are the average results, whether taken by individual years or for all four years combined, though there were wide variations in the rates of earnings among the individual companies in each group.

Extent of Federal Taxes on Earnings

A considerable part of the earnings of the steel companies during 1917 and 1918 were payable, as already noted, to the Federal Government in the form of income and excess profits taxes. These steel companies, excluding the Steel Corporation, reported for 1918, on the average, as reserved for such Federal taxes, an amount equal to 42.5 per cent of the net earnings, or 7.9 per cent of their aggregate investment. For the Steel Corporation the reported provisions for Federal income and excess profits taxes amounted in 1918 to 55.7 per cent of its earnings in that year, or to 11.8 per cent of its investment. The amounts reserved for Federal taxes were also large in 1917, but in 1915 and 1916 they were comparatively small. These figures generally refer to the amounts reported by the companies as reserved for Federal taxes, and not to the amounts ultimately found payable, or actually paid, in respect to the earnings of that year.

War-Time Earnings of Pig Iron and Coke Companies

For a large number of companies that made pig iron only, the so-called "merchant furnaces," the average rate of earnings was somewhat lower than for steel companies, namely, 15.9 per cent for the four years, 1915 to 1918. For a representative group of beehive coke companies of western Pennsylvania, including the Connellsville district, the average rate of earnings for this four-year period was 17.1 per cent. For these pig iron and coke companies a detailed analysis of the rates of return according to the size of the company, as measured by investment, also shows much higher rates of profit for the smaller than for the larger companies.

Nature of Cost Data

Costs of iron and steel products were reported to the commission during the war by the steel companies themselves, and only in exceptional instances was there any verification made of these reports by comparison with the accounts of the companies. The costs reported were generally in the form of furnace or mill costs; i. e., exclusive of certain overhead costs, such as general, administrative and selling expense. For some companies, and especially for the Steel Corporation, on account of the plan of organization, these costs contain considerable amounts of intercompany profit. The approximate amounts of the intercompany profit were ascertained at the outset, but there was no need for a more precise determination for the pur-

(Continued on page 1390)

TO ENCOURAGE RESEARCH

Annual Medal and Lecture to Be Established by Testing Society—Former Leaders Honored

The executive committee of the American Society for Testing Materials will recommend to the society at the annual meeting at Atlantic City in June the establishment of a medal and an annual lecture, which have been proposed by Committee E-9 on Correlation of Research, primarily as a means of stimulating research in materials and of keeping before the members the important function of the society in promoting knowledge of engineering materials. The executive committee has felt that their establishment affords the opportunity of commemorating for all time the names of the first president and the first secretary of the society. It will therefore recommend that the medal be known as the Charles B. Dudley Medal and the lecture as the Edgar Marburg Lecture.

Charles B. Dudley Medal

It is proposed that the medal shall take the name of the first president of the society, Charles B. Dudley (1842-1909). Dr. Dudley, whose most distinguished service was as chemist of the Pennsylvania Railroad, which position he held from 1875 till his death, served as president of the A. S. T. M. from 1902 to 1909, and his inspiring leadership has had a profound influence upon the development of the society. Himself a noted research worker and investigator, it was considered most fitting that this medal should bear his name.

It is recommended that the medal shall be awarded to the author or authors of a paper of outstanding merit presented before the society, constituting an original contribution on research in materials, with the understanding that if no paper in any given year seems to merit this distinction the award will not be made;

and that the executive committee shall appoint annually a committee on award of the medal to consist of three members.

Edgar Marburg Lecture

Similarly, it is proposed that the lecture shall commemorate the name of the society's first secretary, Edgar Marburg (1864-1918). Serving as secretary from 1902 until his death in 1918, Dr. Marburg put the work of the society on a very firm foundation and, through his development of the technical programs year by year, brought wide recognition to the society as a forum for the discussion of properties and tests of engineering materials. His valued services in this direction and his own worthy contributions to the knowledge of materials are fittingly recognized in the proposal to identify his name with this lecture.

It is recommended that this lecture shall afford an opportunity for the society to be addressed by leaders in the field of engineering materials, who will present outstanding developments in the promotion of knowledge of engineering materials, and shall carry with it an honorarium of \$200 and a suitably engraved certificate. It is proposed that the executive committee appoint annually a committee of three members to select the lecturer and that, in this selection, consideration be given to the plan of securing foreign lecturers at suitable intervals and as the funds permit.

To establish the medal and lecture upon a proper basis will require about \$6,000. The executive committee recommend that the funds be contributed by the members, confident that its recommendation will meet with the whole-hearted approval and that every member will wish to aid in the financing of these two features.

These recommendations will be made formally by the executive committee to the society at the Wednesday evening session during the annual meeting in June, at which there will be opportunity for discussion.

CONFIDENCE NEEDED

President of Youngstown Sheet & Tube Co. Sees Steel Industry 75 Per Cent Engaged

President James A. Campbell of the Youngstown Sheet & Tube Co., addressing stockholders at the annual meeting last week, said that increasing cost of operations due to diminished scale of production, will tend to stabilize finished steel prices and may even bring about advances in some lines.

"Basic conditions are all favorable for fair business," he stated. "Returning confidence created by price stabilization will bring out large tonnages now being withheld pending pricing developments."

Mr. Campbell said the company's back-log of unfilled tonnage is now larger than at any time this year. Buying, which fell off in February and March, is picking up and the Sheet & Tube plants are fairly well employed. There are abundant indications that business is coming back, he said. Shipments in April were 5 per cent larger than in March and specifications 10 per cent ahead, but prices are low and as a result profits are low.

President Campbell sees favorable signs in the soundness of the Coolidge Administration, ability of the railroads to purchase steel and equipment needs, improved buying power of the farmer and the more favorable European outlook.

"Good business, however, needs one thing," he stated, "and this is a return of confidence by buyers of steel products. There is a great deal of tonnage held back because buyers lack confidence in the stability of current prices. Fabricators are scraping stock piles before buying steel and when they are obliged to buy, take small tonnages to tide them over immediate needs."

"Business is good for 75 per cent average capacity of the country. Striving for 100 per cent operations with 75 per cent business brought about prices which in many instances are at cost. The steel industry in

the immediate future will, in my opinion, adjust itself to the going business rather than try to secure 100 per cent capacity operations."

Sound Financial Condition

Referring to the company's financial condition, President Campbell said it has \$10,000,000 in cash in the banks and no bank loans, and there will be no public offering of loans in connection with proposed extensions, though it may be necessary to do some short time borrowing.

The company will blow out two blast furnaces about May 1, Grace stack in the Brier Hill group at Youngstown, and one of the furnaces at the Iroquois plant in Chicago. About two weeks later the one operating stack at Hubbard will be suspended.

Mr. Campbell said that while pig iron business is quiet, because buyers are scared about prices, the melt of foundries is large and this business will come back before the year is over.

Contracts for the seamless tube mills authorized have been awarded. One-half, including the actual mills, went to two German makers, and the rest, with auxiliary equipment, to American concerns.

Mr. Campbell explained that the company is not increasing its ingot capacity, but is bringing finishing steel capacity up to that of steel making. "We will have excess ingot capacity at the Brier Hill works," he said.

Next year the company will install a Morgan-type continuous skelp and bar mill at East Youngstown, to replace an older unit. It will be similar to the installation now being made at Indiana Harbor, this mill having originally been ordered for the East Youngstown works.

Circular No. 200 of the Bureau of Standards, Washington, is a presentation of the U. S. Government master specification for heavy rust-preventive compound. It is designated also as Master Specification No. 239.

LABOR'S OUTPUT LOWER AS PRODUCTION DECLINES

Manufacturers Face Problem of Decreased Output Per Man While Volume of Business Dwindles and "Real Wages" Remain High. It Is Apparent That

- (1) The trend of employment is slightly downward to correspond with reduced production schedules.
- (2) This is true both of the average for all manufacturing industries and of the iron and steel business.
- (3) Labor efficiency is declining on the average, and although the output per employee in the iron and steel industry was still high in March, the indications are for a decrease in efficiency as volume of production is stabilized at a lower level.
- (4) Labor earnings are well maintained and "real wages" are as high as a year ago.
- (5) Volume of employment is probably somewhat above that required by present demands on industry and decreases are likely to occur.
- (6) If the decrease in efficiency continues, either earnings or wages will have to be reduced.

BY DR. LEWIS H. HANEY

Director, New York University Bureau of Business Research

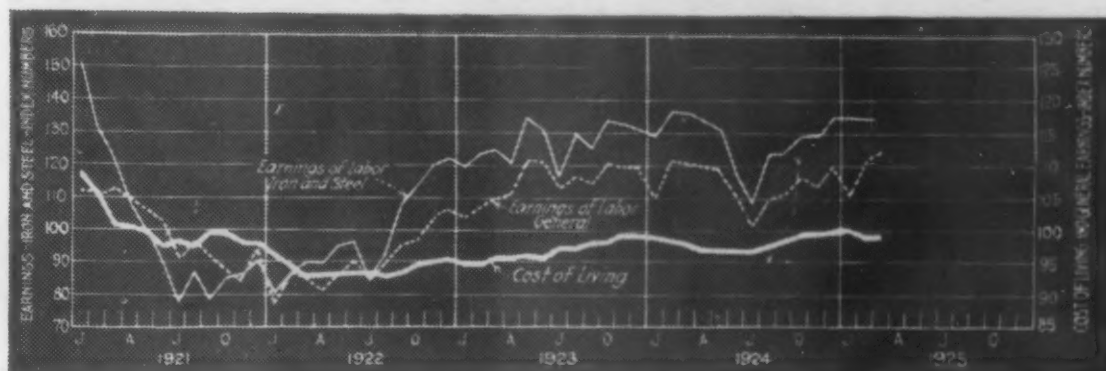


Fig. 1—Earnings of General Labor Highest in Four Years; Iron and Steel Wages Close to Peak

Earnings data from United States Bureau of Labor Statistics. Cost of living index as reported by National Industrial Conference Board. All index numbers based on 1921 monthly average as 100

EMPLOYMENT in the manufacturing industries of the country at the middle of March was about 1 per cent greater than at the middle of February. This small increase, however, was entirely seasonal, and does not represent any expansion in industrial activity. When allowance is made for the usual seasonal trend between February and March, the real trend of employment is shown to be downward. The industries which showed the largest decreases in employment were: Tobacco, flour, confectionery, woolens and rubber boots and shoes.

There was a slight gain in the average per capita earnings of labor in March, which was also chiefly seasonal in character. It was made possible by the continuation of a fairly high percentage of full-time operation. The industries which showed the largest gains in average weekly earnings were: Millinery and laces, petroleum refining, saw mills and sugar refining. The largest decrease occurred in the case of woolen and worsted mills.

The changes reported in actual wage rates were not important, but it is noticeable that the number of

employees whose wages were reduced was larger than those who received advances. In 21 industries, 41 establishments made increases affecting 3184 employees; in nine industries 27 establishments made reductions affecting 6913 employees.

The total payrolls of a large number of representative manufacturing establishments in March, 1925, were 3.1 per cent less than in March, 1924. On the basis of Bureau of Labor Statistics' returns, the manufacturers of the country made a smaller total payment to their combined labor

Here, in the first issue of each month, appears an analysis of the labor situation,

The second issue of each month usually covers conditions in iron and steel,

The following issue every month is devoted to the general business situation, and

The fourth issue then focusses on items of manufacturing costs.

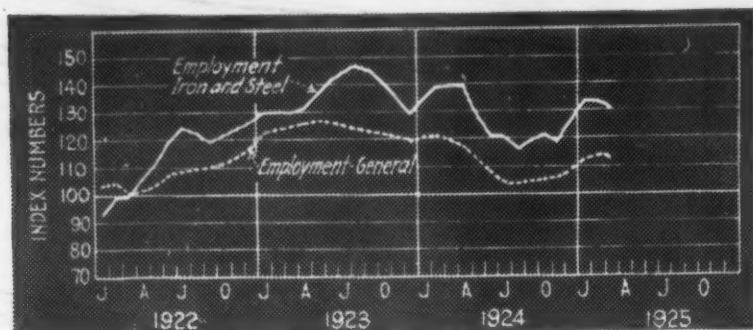


Fig. 2—Employment in Iron and Steel Industry Has Declined Since January

Indexes based on United States Bureau of Labor reports

forces than was the case a year ago in the following sections: Pacific Coast, Mountain States, West North Central States and the whole Northeastern section.

A summary of the activity in manufacturing industry on the

clothing, while food and fuel and light were the same as in February.

These facts indicate a continued high level of "real wages." The spread between the cost of living and the average per capita earnings of labor is still large. It

with February, it is seen that there was no real upward trend. The indexes shown in Fig. 2 are adjusted to eliminate the usual seasonal variation, and reflect the true trend. That trend is clearly downward, both in industry in general and in the iron and steel industry in particular.

It is to be noted that the net decrease in employment in the iron and steel industry was greater than in the average of all industries. This is also true of the percentage of full-time operation.

Judged by employment, activity in industry in general was about equal to that of May, 1924, and of November, 1922. Activity in the iron and steel industry was on the same level as in May, 1924, and April, 1923, in so far as employment of labor is concerned.

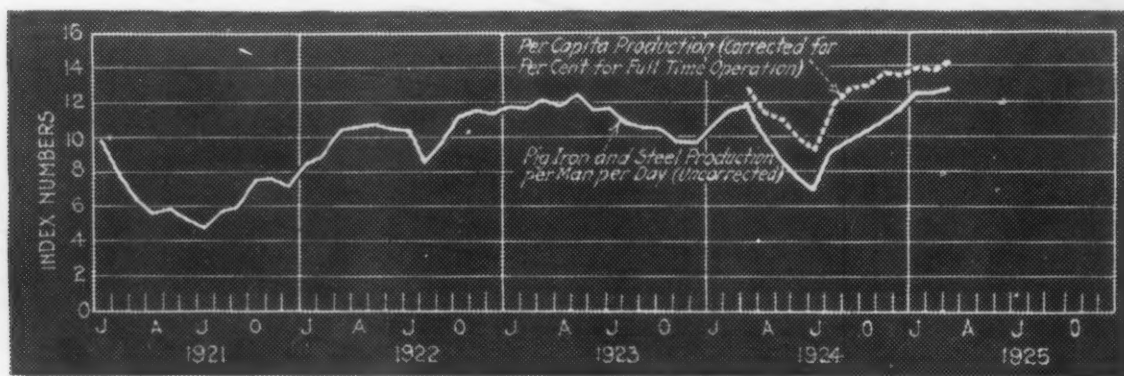


Fig. 4—Per Capita Production in Iron and Steel Industry Probably at Peak

The solid line represents the number of tons of iron and steel produced per month divided by the estimated number of men on payrolls

basis of March labor reports is as follows:

Plants idle.....	1 + per cent
Plants operating.....	99 — per cent
Per cent full-time operation.....	69
Per cent part-time operation.....	30
Per cent full labor force.....	42
Per cent part labor force.....	57

These figures represent a decrease from February in percentage of full-time operation among operating plants.

"Real Wages" Still Very High

AS shown in Fig. 1, the upward trend in the earnings of labor was checked in March. In that month there was only a small increase, which was entirely seasonal in character.

The per capita earnings of labor in the iron and steel industry decreased slightly, due chiefly to a decline in full-time operation.

The cost of living index of the National Industrial Conference Board remained unchanged in March. There was a decrease in shelter, offset by an increase in

is almost exactly the same as in March, 1924, and is much greater than in March of 1921, 1922 or 1923.

Downward Trend Clearly Indicated

WHEN allowance is made for the usual gain in employment which occurs in March as compared

The outstanding feature of reports concerning employment in various branches of the iron and steel industry is the gain in "structural iron." In New Jersey employment in structural iron increased 3 per cent and in Pennsylvania 5.6 per cent. A seasonal gain is customary at this time of year.

Increased employment in the automobile industry is reported from various sections, the gain being 8 per cent in New York State.

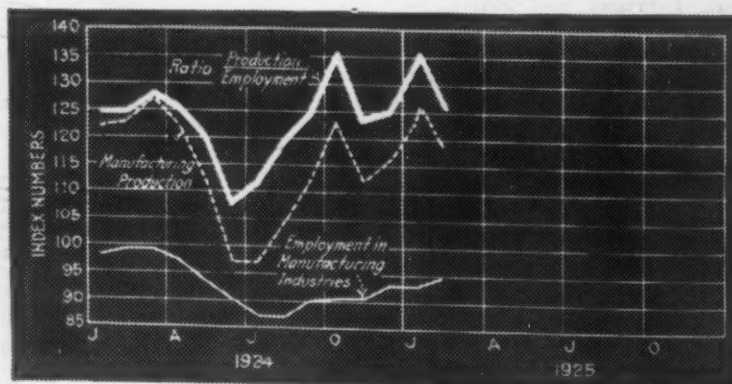


Fig. 3—Labor's Productive Efficiency Lower as Volume of Output Drops

Based on the data of the Federal Reserve Board, 1919 as 100

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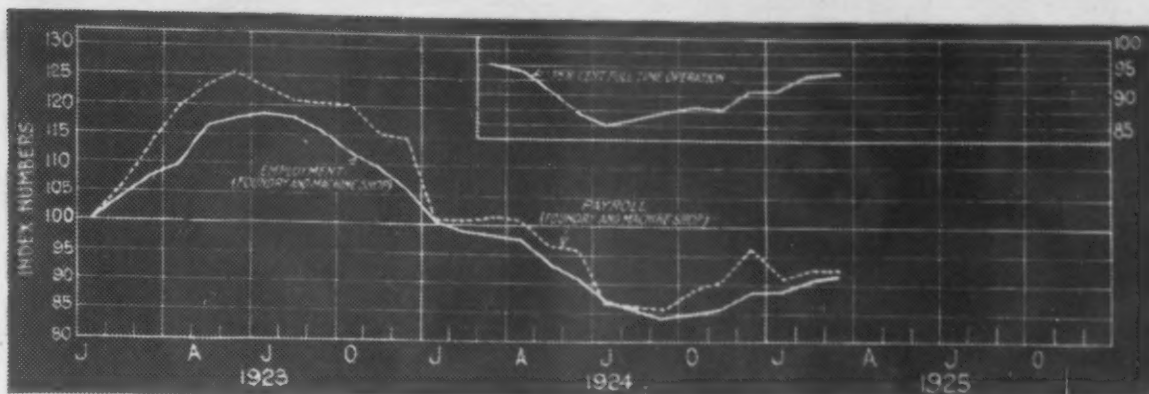


Fig. 5—Foundry and Machine Shop Employment Gains, Payrolls Also Rise

On the other hand, employment in steel works and rolling mills, makers of heating appliances and iron and steel forgings appear to show considerable decreases in employment in March.

More Workers: Less Output in February

IN February, which is the latest month for which the comparison is available, the ratio of employment in all manufacturing industries to output made a less favorable showing than in the preceding month. This fact appears in Fig. 3, which is based upon Federal Reserve Board data.

Manufacturing production decreased 5 per cent. Employment increased 2 per cent. As a result the ratio declined sharply. March indications are that, while there may be a seasonal gain in the ratio, the trend of the output per employee will be downward. This will make it necessary to reduce em-

ployment, either by decreasing the labor force or by more part-time work.

Labor Efficiency May Be at Peak Now

IN Fig. 4 is shown the trend of the average production of iron and steel per man per hour. While based upon an estimate, it is believed that the trend is accurate. The dotted line in Fig. 4 shows the ratio between output and labor, adjusted to allow for the percentage of full-time operation, which gives an indication of the output per man-hour.

A glance at the graph shows that the general trend of production per man has been upward since 1921. Since July, 1924, there has been a large gain. Evidently at the present time the output of basic iron and steel products per man is at the peak, and probably will show decline in the following months.

Foundry and Machine Shop Employment Good

FOUNDRIES and machine shops show a small gain in employment, the increase being less than that of the preceding month. The payrolls of the industry increased somewhat more than did employment, which is explained by a rather large percentage of full-time operation. There was also a little change in wage rates in the industry, 5 establishments reporting an average increase of 7.6 per cent. These facts are illustrated in Fig. 5.

In Pennsylvania iron foundries showed an increase of 5.6 per cent in unfilled orders and steel foundries an increase of 2 per cent. Illinois machinery factories report an increase of 1 per cent in employment. Buffalo foundries showed a severe decrease, and the total bookings of steel castings as reported in this department last week fell off in March.

The Iron Age, May 7, 1925

Sheet Steel Producers Charged with Speed Mania

WHITE SULPHUR SPRINGS, W. VA., May 5.—Frequent reference to the "speed mania" as it applied to the production of sheet steel and the effect that production well in excess of the demand was having upon prices featured the first session of the third annual meeting of the Sheet Steel Executives at the Hotel Greenbrier here this morning.

Severn P. Ker, president Sharon Steel Hoop Co., in a brief but stirring address, claimed that it was not within the right of anyone to conduct business in a way that injured others, and while voicing vehement opposition to Government, except by law, expressed the fear that management of a sort that hurt the industry and was not helpful to the stockholders, the workmen or the community could not fail to invite governmental intervention.

The responsibility for a condition that was driving the sheet industry upon the rocks of failure and bankruptcy, Mr. Ker emphasized, was not individual, but resulted from the fact that the industry, now having 712 hot mills and capable of producing more than 5,000,000 tons of sheets annually, was split into too many units, and there was too great a tendency to keep the mills running full when there was not enough

demand to sustain such a condition. Responsibility for the low and ruinous prices which have lately prevailed, Mr. Ker said, was not with the salesmen. Not with his own company, and he did not believe with others, did the salesman have carte blanche authority with respect to sales prices. Rather the entire responsibility for low prices rested with the sales executives. And the company which made low prices in the belief that they would not become known was fooling nobody. The speaker said there were no secrets in competition and expressed the belief that he would have practically no trouble beyond the asking, to find out the lowest prices made by any of his competitors.

The Crompton & Knowles Loom Works, Worcester, Mass., has put into successful operation a course of instruction, which it is expected will result in a better understanding of materials and processes on the part of employees. The classes are instructed by company representatives as to materials which are constantly in use and are also given a series of lectures treating the making of steel from the ore to the finished product. Special attention is given to the heat treating of steel, to testing, and to the use of microscope and the plants of the American Steel & Wire Co. at Worcester are visited. The process of wire making from start to finish is visualized.

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European Machinery Men Here

MUCH significance is attached to the visits paid to the United States in recent months by increasing numbers of Europeans whose errand is the study of American machine tools and machine tool practice. Some are seeking agencies, a greater number are users of machine tools, and still others are machinery builders or their representatives. Central Europe has the largest contingent, notably from Germany, Austria and Czechoslovakia. Other visitors are from Sweden, Italy, France and Great Britain. We always have with us a few foreigners who are studying the machinery industries, but at this time there are more than a few. Nothing like it has been seen since the pre-war period.

The visitors are finding much that interests them in the way of new types and of improvements on the types with whose older models they are familiar. The changes in American metal-working machinery since the war have been extraordinary and could not but astonish those who have not studied the results at close range. Until recently most of the firms the visitors represent had little incentive to probe closely into new manufacturing equipment outside of Europe, for their home countries were buying little, least of all in the United States. They have been poor and the unfavorable exchange has been most discouraging. Further, their home machine tool makers have named prices which no American house could meet without taking a material loss.

Affairs abroad are now straightening out to a considerable extent. The gold basis is coming into its own. Many large users of machine tools have begun to think of new equipment in terms other than of price alone. It is no longer sufficient that a machine resemble in appearance the American models to which they are accustomed. Increasing numbers of orders placed in the United States in the last few months are considered to be the beginning of a brisker trade later.

Before the war American machinery builders did a thriving business in Europe. Their customers were enterprising manufacturers who

looked upon machinery from another basis than that of low initial cost. Production was what they were after. When they were convinced that a machine would do more work or better work than a cheaper machine, they paid the higher price without complaint. Exports of advanced types of equipment reached large figures. Nothing European builders could offer could compete when it came to machine results. Even where American models had been copied with what seemed absolute precision, the counterfeits could not do the same work, as was demonstrated time and again. Moreover, the counterfeits were always several years behind the latest of our models.

Now history is expected to repeat itself. Europe may continue to supply practically all its own needs in standard machines, comprising ordinary lathes, planers, milling machines and the rest. But Europe is not building the machinery wanted by progressive factory managers in adapting their plant to American factory methods. The belief is growing there that in many lines successful competition in the markets of the world will be possible only through mass production with machines that will turn out product of the required excellence in minimum time. Another factor is that the skilled mechanic is no more abundant across the water than he is in the United States; hence the new American machines which eliminate him as a prime factor have much to recommend them in the eyes of shrewd foreign buyers.

Not for years have foreign competitors in the machine tool industry been so far behind in their designs. It will be some years before they can catch up with latest practice. However hard the European machine tool builder may strive, Americans are assured of a great advantage where machine production and not price is the test to be met.

Such are the conditions as they appear to some observers. Probably they are responsible in large measure for the recent influx of European machine men. What will come of these visits is naturally a matter in which American machine tool builders are taking the liveliest interest.

Promise in Codes of Ethics

BUSINESS conduct is steadily improving, notwithstanding all the lapses which it is possible to marshal. An outstanding proof in recent years, and one that is not mere window dressing, is the formulation of codes of business practice for particular branches of industry.

What especially marks the later developments is the desire for claws in the pledges, as well as the belief that non-subscribers will be marked by their isolation. Machinery for bringing transgressors to the bar may be ineffectual, as it has been used rarely so far where it is supposed to exist. Thus it comes about that the best guarantees of adherence to the golden rules of business will lie in invoking publicity.

As industrial associations with codes of business morality grow more numerous, the non-signatory firm becomes more and more conspicuous, while the association without its code is out of step and in danger of falling behind the procession. A company coming upon unethical methods in its relations with a supplier or a customer might well use an association as a means of dealing with the offender, saying nothing of informing those who should be put on their guard. There is also the chance that some of the alleged irregularities would be explained on the sifting of charges, and the high character of general business dealing definitely sustained, whereas today charges often go unrefuted.

In this general movement the National Machine Tool Builders' Association has taken a part which other trade groups might emulate. It has compiled a long list of the ways in which the principles of good business conduct are violated. The list leaves little to the imagination. It defines just what each departure is and what it means. It supplies a pattern which may be adapted readily by another industrial group to the needs of that group. It should prove highly helpful to any industry to live up to this code. When to its informative value there is added its disciplinary value, it gives the trade association a double reason for being.

Giving Business a Rest

THE announcement at Washington that business is to be given a rest if it conducts itself properly has been received with satisfaction. It is refreshing to know that the harassing of business is not to be the major activity of public officials during the summer, even if some of them have been responsible for rather remarkable proceedings of late, such as the suit against the Bethlehem companies.

Closely connected with this promise of less meddling in business affairs comes word of a change of policy of the Federal Trade Commission which, in spite of the fact that there is serious disagreement among the members, has announced that it will be more careful in making public statements. If cases are settled by the parties concerned, there will be no public announcement, and when a complaint is issued no statement will be made for publication until after the final determination. After a complaint has been issued and the answer filed, or if no answer

is filed, the papers will be open to the public.

These are sensible decisions. It is easy for a company or individuals to make charges against competitors and newspapers can be depended upon to publish anything that is sensational. Such publicity may do great injustice. A long time may elapse before the accused is given a hearing. If the testimony does not happen to be as interesting or sensational as were the original charges, the newspaper space devoted to the subject is likely to be limited, if indeed anything is said. In other words, the public is given one side of the controversy in the extravagant language which lawyers are likely to use and reporters are glad to adopt. If, however, charges are made in due form, and the answer filed, the public has a right to know all about the proceedings.

Commissioner Thompson, in objecting to the new rule, asserts that if it had been enforced when the Pittsburgh plus case started, the application for a complaint could have been dismissed without any published statement. Possibly such a course could have been followed, but it does not seem likely that any commission would so decide. The proceeding was important to so many people that the commission would not have dared to deprive the public of the facts. The rule of reason is supposed to control even public commissions, erratic as they may seem at times, and there is little danger that the new plan will result in the public being left in the dark about anything to which it is entitled.

If we are to have a season of less talking and limited publicity at Washington, it is devoutly to be hoped that, while agitation is suspended, thinking will continue, so that some of the nation's problems will be nearer solution when Congress meets than they are today.

Fewer Workers, More Output

SOME recent lamentations that "there are not enough farmers," because the last census showed a decrease in the number, although the population increased, naturally suggest that perhaps the real point is that methods have been so improved that it does not require so many farmers to produce a given quantity of product. If so, we are so much the better off, for the persons released can produce something else. It is really quite well known, in fact, that the United States used to be an agricultural nation, doing relatively little but produce its food and clothing, and that improvements have enabled it in the past three-quarters of a century to turn largely to manufacturing, and we are so much the better off by the use of the manufactured products.

The point about the number of farmers and the agitation as to "child labor" prompt a reference to the last census report. Salient facts are condensed in the following statement, computed from the 1910 and 1920 reports:

Percentages of Population Gainfully Employed		
	1910	1920
10 years and over.....	53.3	50.3
10 to 15 years.....	18.4	8.5
Over 15 years.....	59.5	57.7

This was the first decrease shown by census reports in the proportion. The 1880 census showed 34.7 per cent of the total population gainfully occupied, or 47.3 per cent of those ten years

and older. The increasing proportion up to 1910 may be ascribed, it would seem, to improvements in machinery and processes whereby less skillful persons could be used. The decrease subsequently may be ascribed to increased prosperity, whereby improvements enable us to produce without straining our working forces by employing the very young or the least fit.

Our per capita output has increased greatly, and when we can get the increased output with a smaller percentage of the population we are all the better off. We have so much more real prosperity.

If those who have bewailed the decrease in the number of "farmers" had looked a little further they would have seen that, while the decrease in number from 1910 to 1920 was 13.5 per cent, the decrease in female farmers was 40 per cent and in male farmers 10 per cent. The proportion of female farmers was 14.3 per cent in 1910 and 9.9 per cent in 1920. The designation is "agriculture, forestry and animal husbandry."

It is a fact worth noting and remembering that a portion of the prosperity we now observe is due merely to the adventitious circumstance of both births and deaths having decreased. That portion does not altogether represent a permanent or rather continuous improvement in our status. According to the National Bureau of Economic Research, births per thousand of population decreased from a trifle over 26 in the years 1914 to 1918 inclusive, to a trifle over 23 in the last three years. Deaths per thousand were from 13 to 14 in the years 1910 to 1917 inclusive, and averaged less than 12 in the past four years. That means that our population is more "grown up" than formerly and thus better able to take care of itself.

Real Wages Change Every Day

WHEN commodity prices start downward there is a period of uncertainty during which the manufacturer is trying to balance decreased inventory values, lowered sales volume and increased cost per item. There is little he can do about the first two; for the most part they are beyond his control. But he is aware that production costs must come down. Yet his labor costs are actually rising, for productive efficiency is at maximum only when volume is at peak. With every decline in output, proportionate labor costs go up. Nevertheless, the employer is reluctant to cut wages.

What is too seldom realized is the extent to which wages actually rise during a falling price period. Money wages may not change, but since a dollar will buy more, *real wages* actually have increased. It is quite possible to reduce money wages in proportion to the declining cost of living without in any way affecting the buying power of the employee. Some companies are now using the current cost of living figures to readjust money wages quarterly or semi-annually. If the workers understand that it is only the amount of money that is being reduced, instead of the amount of goods they can purchase, they are usually more willing to accept the reduction. But often manufacturers adopt a policy of watchful waiting which merely results in increased costs until a decision is forced upon them.

By-Product Coking for the Public

THE essence of by-product coking is continuity of operation, yet the process has its chief vogue in the industry whose requirements are the most fluctuating. By-product coking for the public is very much in its infancy, yet the demand of the public is by far the steadiest, except, of course, for the seasonal variation which readily can be covered by the carrying of stocks.

The iron and steel industry adopted the by-product coking process because it had to have coke anyhow and could finance the heavy outlays required. The general public can use coke and will use it if educated. There is much economy to be obtained.

The Geological Survey's preliminary figures for 1924 present interesting points. Last year having shown much less activity in iron than 1923, there was a decrease in by-product coke production from the 1923 record of 37,597,664 net tons, but the decrease was only 7 per cent, whereas in beehive coke it was 50 per cent. The proportionate production in 1924 was 77.9 per cent by-product and 22.1 per cent beehive. The capacity of by-product ovens built and building is about 49,000,000 net tons, or close to the record production of all coke in 1923, approximately 57,000,000 tons.

Thus, the by-product industry has nearly reached a point of being able to care for all the coke consumption that hitherto has existed. The new field, in the use of coke and coke oven gas by general consumers, including domestic consumers, is thus far but lightly touched. The by-product ovens built and building will have a carbonizing capacity for about 70,390,000 net tons of coal, as estimated by the Geological Survey, while normal production of bituminous coal may be taken at 550,000,000 net tons. The proportion, therefore, would be about one ton in eight, whereas it is entirely feasible, and would be economical, for the country to convert much more coal into coke before burning the fuel elements contained.

The typical by-product coking plant for the general public should run quite steadily. Figures are furnished showing the monthly operation in the past three years of the by-product ovens connected with blast furnaces, also all other by-product ovens. The latter ran much more steadily than the former, yet part of their output went to blast furnaces. In 1922 the furnace oven plants ran in their best month at 74 per cent over their rate in the poorest month, while the other ovens had an excess of 58 per cent; in 1923 both had a maximum exceeding the minimum by 11 per cent, and in 1924 the furnace ovens had an excess of 44 per cent of the maximum over the minimum, while the other ovens showed only 24 per cent. Even at that, the other ovens had been affected by the iron industry's swings.

Eventually the thing will be done. When capital can be found for water power development, it is reasonable to expect it to be available for by-product coke plants to serve the general public. Besides the direct economies there will be a distinct advantage in linking such a steady coal consumer with the coal industry, which long has had so much trouble from intermittent operation.

Demand Sherman Act Modification

Elimination of Disastrous Price-Cutting Depends on Revision of Outworn Anti-Trust Law—Resolution Passed by Mill Supply and Machinery Distributors at Atlantic City

THE Sherman anti-trust law has outlived its usefulness, at least in its interdiction of all selling price arrangements, in the opinion of the National Supply and Machinery Distributors' Association, which passed a resolution at its convention last week urging modification of the law so that it will be less drastic against associations or other groups of manufacturers and distributors.

Need for Curbing Price-Cutting

It was pointed out that many of the so-called evils of price cutting could be eliminated if distributors could get together legally and fix reasonable selling prices. It was the sense of the meeting apparently that the Department of Justice is standing over business with a stuffed club, and that business men are not permitted to do anything even in self-protection.

This situation was forcibly presented to the association by Dixon C. Williams, president Chicago Nipple Mfg. Co., Chicago, who said that he was going to advocate that trade associations appoint representatives to go to Washington to work for modification of the Sherman law. Mr. Williams said that Secretary of Commerce Hoover recognizes the need for a more liberal attitude toward business, but that the Department of Justice prevents a more moderate view being carried into effect by any other Government authorities.

Secretary Discusses Trade Evils

In his report to the convention, Secretary George A. Fernley said that the attention of the association is frequently called to cases where manufacturers attempt to sell to distributors and at the same time try to sell the distributors' customers at approximately the same price. Mr. Fernley said that members had been asked to correspond with such manufacturers and to give publicity to such policies. "The Sherman law," he said, "prohibits our association, or any combination of two or more, from giving publicity to manufacturers who act in this unscrupulous manner, and in this connection we would remind you that our association has never had its actions questioned by the Department of Justice or the Federal Trade Commission. Individually our members have the right to buy or to refuse to buy as they see fit, and if a manufacturer is not pursuing a policy which is in keeping with the ideas of an individual members, that member has a right to refuse to buy from such manufacturer.

"Our members individually have a right to inquire of manufacturers as to their sales policies and if the buyers of our member companies are diligent in securing this information before purchasing, there will be less complaint regarding this form of competition. There is always a tendency among some operators to attempt to sell regardless of ethics, policies or sound business principles and such efforts should not be countenanced by our members."

Throughout its sessions, which were held on April 27, 28 and 29, at the Ambassador Hotel, Atlantic City, the association members heard frequent references to the difficulties that all classes of manufacturing and distribution are having today in making a satisfactory profit. The mill supply business, it was stated, is suffering from price-cutting and insufficiency of margins of profit on many of the lines of goods handled. Twist drills were singled out as an example of one of the so-called unprofitable lines which all mill supply men must handle, but on which manufacturers allow only a 20 per cent margin, while the bare cost of doing business in the trade is estimated at 21 per cent. A resolution as follows was adopted:

For several years the National Supply and Machinery Distributors Association has been assembling definite information on the cost of doing business. This, as in every line, is constantly increasing. In 1924 it averaged 21 per cent plus, with not much prospect of being reduced very much in the near future.

Greater margins are the only remedy by which this situation can be met, and the differential allowed by many manufacturers is not sufficient to meet the cost of doing business.

Therefore it is the sense of the National Supply and Machinery Distributors Association here assembled that this serious condition be called to the attention of all manufacturers doing business with supply dealers with the request that the manufacturers arrange to allow the dealers a sufficient differential to cover the cost of doing business and leave a reasonable profit.

Says Dealers Give Profits Away

At one of the sessions attended by manufacturers, the complaint of the supply men was answered in part by a manufacturer who stated that on his own line a very reasonable margin of profit was allowed to the dealer, who frequently gave it away to his customers when it was unnecessary to do so. Price cutting on

Would Curb Ruinous Price Cutting

EXPLAINING his views in regard to the Sherman law, Dixon C. Williams, president Chicago Nipple Co., said that the law was all right at the time it was adopted, but that it needs adaptation to the present situation. He later amplified his position in a statement to a representative of THE IRON AGE by saying that business does not want to "fix prices" for the purpose of obtaining exorbitant profits; that day is over, but in self protection industries must do something to curb ruinous price cutting. He believes that it should be legally possible to maintain resale prices which are reasonable.

In his talk to the convention, Mr. Williams said he knew of one company which last year did \$9,000,000 worth of business and made only \$60,000 profit, while another company did \$3,000,000 worth of business and lost more than 8 per cent on its capital stock. He said these were not isolated cases, but presented an accurate picture of the situation which today faces a large part of American industry.

Officers Re-elected



First Vice-President
Chairman, Machine
Tool Section
T. W. CARLISLE
 Strong, Carlisle &
 Hammond Co.,
 Cleveland



President
B. H. ACKLES
 Manager, Factory Sup-
 ply Department
 T. B. Rayl Co., Detroit



Second Vice-President
E. P. WELLES
 Charles H. Besly & Co.,
 Chicago

The executive committee has one new member, E. B. Hunn of C. S. Mersick & Co., New Haven, Conn., and the re-elected members are: J. H. Orem, Jr., Carey Machinery & Supply Co., Baltimore; L. B. Shaw, Machinists Supply Co., Chicago; W. A. Somers, Somers, Fittler & Todd Co., Pittsburgh. George A. Fernley was reappointed secretary-treasurer and T. James Fernley was reappointed advisory secretary-treasurer.

the part of some of the mill supply trade was cited as one of the great evils which is injuring the business. A manufacturer stated that he had notified some of his customers that if they did not care to maintain his resale prices, he did not wish to do business with them and would prefer to have his line handled by those who would maintain and obtain the established differentials.

Mr. Williams had just returned from a trip to the Pacific Coast and said he regretted that he could not give an optimistic report on business conditions in the West. He said that fundamentally conditions were sound, but business is not good. "There is too much production and there are too many supply men," he said, "and also too much price cutting, so that nobody is making a living." He spoke of the excess of capacity in most lines and said that manufacturers were not satisfied unless they were doing a 100 per cent business, and that is impossible today.

Ask for Uniform Cash Discount

Another step taken by the association was an appeal to manufacturers who are not now granting a 2 per cent discount for cash to do so as soon as is possible. It was suggested that when manufacturers make the next change in their price lists they work toward a uniform 2 per cent discount. Association members are willing that the difference be added to the cost of the article, but the point was made that varying discounts cause difficulty and some losses as distributors are required to give uniformly a 2 per cent cash discount. The average now granted by manufacturers in these lines is 1.26 per cent.

Uncertainty Causes Cautious Buying

In his presidential address, Mr. Ackles referred to the business perplexities of the past year. The feeling of uncertainty has led to very cautious buying, he said, which is a difficult policy for the distributor who must carry ample stocks to meet the every-day demands of his customers.

"Earnest efforts have been made," he said, "to keep down to the lowest possible point the expense of distribution, but the demand for prompt and efficient ser-

vice is such that this has been extremely difficult, so that the figures we have gathered indicate that our efforts to lessen the cost of distribution have not met with complete success.

"In the supply department, goods go out in very small units and there is a tremendous expense of handling, which is out of proportion to the value of the merchandise, but it is rightly considered as a service rendered.

"It is pleasing to be able to address a large number of representative manufacturers whose goods we are distributing and to call their attention to the importance of taking a real, personal interest in the successful conduct of the supply and machinery business.

Distributors of Standing

"Our manufacturing friends realize that they must have distributors who carry stocks in all parts of the country to supply the demand which is created by the merit of the product involved, and we feel certain that manufacturers would much prefer to have this distribution in the hands of people who are prosperous and hence in a position to pay their bills promptly rather than being compelled to depend on the type of concerns which through unrestrained competition have impoverished themselves so that they are not desirable credit risks.

"I particularly desire to emphasize this point and would have our manufacturing friends realize that their interest in us should not cease when payment has been made for goods purchased, but that they should consider that the distributing house is a part of their organization and needs their cooperation in every particular.

Urges Loyalty to Manufacturers

"We want to call the attention of our members to the fact that manufacturers who are looking upon them as distributors should be treated in a way which will impress them with the fact that they are loyal to the position they occupy. There is a tendency at times on the part of the buyer to avail himself of a temporary advantage in price and thus to be disloyal to the manufacturer whose interest he is supposed to be protecting. We call upon our members to be thoroughly reciprocal in their buying engagements.

"We also call special attention to the fact that this association has been endeavoring to increase what is commonly known as the 'turnover.' The Department of Commerce is aiding very materially in this and suggestions which have been sent to us from Mr. Hoover's department for submission to our members indicate to a degree what has been done and also demonstrate the possibilities of the future in connection with cutting down the unnecessary variety of the many goods we handle.

"Your president does not desire to make prophecies, but a careful survey of the situation, together with conferences with a large number of economists and practical business men would lead us to expect a steady improvement in business."

Trade Press Commended

Commendation of the trade press was contained in Mr. Fernley's report "for the service it has rendered in educating and enlightening all connected with the production and distribution of the lines handled by our members. There is no greater power for the education of employees than the reading of trade papers and we are indeed fortunate in having a number of live, active, progressive papers whose constant effort is to present information of value to the industry."

Other subjects discussed by Mr. Fernley were hand-to-mouth buying, profits and turnover, simplification, 2 per cent cash discount and resale prices. Extracts from his report follow:

Hand to Mouth Buying

"The uncertainty which characterized the business situation during most of 1924, the desire generally to reduce inventories and to secure the greatest possible turnover, led to hand-to-mouth buying on a scale never before practiced.

"The customers of our members purchased frequently and the number of small orders increased to an extent never before known. This tendency, of course, increased the expense of distribution, but incidentally it definitely demonstrated the value of the service it is possible for our members to render.

"Hand-to-mouth buying cannot be ascribed entirely to uncertainty regarding values but more largely to a desire for a rapid turnover. The principle of a rapid turnover is sound and important, but it is not and cannot be a cure-all, and if overdone through the carrying of insufficient stocks the results are more unfavorable than when sufficient attention is not given to it.

"The distributors of mill, mine and factory supplies are equipped to render prompt, efficient and economical service to their customers. Frequent small orders are

desirable but hand to mouth buying can be carried to an uneconomical extreme.

Differentials and Turnover

"Our conferences with manufacturers during the past year cause us to emphasize in this report the fact that manufacturers must be educated to the fact that a distributor cannot make a net profit on any item which does not sell at a margin over and above the cost of distribution.

"With the expense of distribution averaging over 21 per cent on the selling price, is it profitable to handle any item which is resold on a basis of 10 to 15 per cent above the actual invoice cost? Does it not show an actual loss on each turnover?

"We therefore wish to suggest the importance of advising manufacturers, particularly those who wish to suggest the price at which their products shall be resold, of the expense entailed in distribution.

"Manufacturers sometimes give as an excuse for inadequate differentials the fact that some distributors do not observe the manufacturers' suggested resale price and say, 'Why should we increase the differential when the distributors are not willing to take advantage of the margin we now arrange for them?' The answer to this question is comparatively simple inasmuch as the manufacturers in such cases hold the 95 per cent responsible for the sins of the 5 per cent.

"In other words, we are firmly of the opinion that most of the distributors in the United States are anxious to conduct their business on a profitable basis and are not desirous of selling on a basis which does not yield a margin sufficient to at least cover the overhead expense.

Simplification of Sizes

"Our association is on record as being in favor of elimination of unnecessary and needless sizes, styles and varieties. The work of Secretary Hoover's Division of Simplified Practice has been carried on effectively during the past 12 months and it has indeed been a pleasure for us to cooperate with the officials of the Department of Commerce. They are doing a great work of real lasting benefit to our members, to the manufacturers and to the consuming public, and Secretary Hoover is deserving of our earnest cooperation.

"Manufacturers have an excellent opportunity to cooperate with governmental assistance in this work and we suggest our members continue to impress upon their sources of supply the importance of eliminating unnecessary sizes, styles and varieties.

(Continued on page 1387)

No Persecution Under Sherman Law, Says E. W. McCullough

SPEAKING recently before the Glass Containers' Association at Atlantic City, E. W. McCullough, manager of the Department of Manufacture of the Chamber of Commerce of the United States, characterized as groundless charges that the Government in the administration of the anti-trust laws is persecuting associations organized for the common benefit of their members. Mr. McCullough said that until there are amendments offered to change the present anti-trust laws or unless some authoritative agency of the Government is empowered to state definitely the legality of the several trade association activities which appear to be desired for them to engage in, it would seem that trouble may be readily avoided if it is borne in mind that the anti-trust laws prohibit creation of monopolies, restraints in trade, or interference with equality of opportunity.

The speaker declared that business men meeting in association or informal conference should experience no difficulty in determining whether or not an agreement or understanding they may enter into is legitimate by testing it on this formula. It was declared that the Government is not given to prosecution of business organizations on mere technicalities, judging by the past, or on premeditated or wilful violation.

Devotes Meeting to Marketing

Machine Tool Builders Last Week Also Drew Up Detailed Guide to Ethical Practices Specifically for Machinery Field

SALES matters occupied the machine tool builders at their spring meeting last week. It was not only a convention on inside affairs but the contributions, with one exception, were made all by members of the industry. Sustained interest and continued attendance marked all the sessions, and the evidence was that one general theme, particularly one of vital and timely importance, developed a working spirit. Noteworthy was the active participation in the work of the association, the National Machine Tool Builders' Association, by committees and also the delegation of new questions to some new committees as well as to

the executive officer, General Manager E. F. DuBrul. Incidentally there were admissions by several members that business after all was fair, or better than generally believed, the prevalence of a pessimistic attitude being pronounced as due to a proneness still to measure industrial activity in terms of the war-time scale or of the post-war boom.

Business and economic subjects have, of course, featured previous meetings, but this time technical or engineering problems were omitted and attention was paid to merchandising. Included was the study of markets for machine tools, the use of advertising, the

GUIDE FOR APPLYING THE CODE OF

I.

THE FOUNDATION of business is confidence, which springs from integrity, fair dealing, efficient service and mutual benefit.

Permitting agents, distributors or employees to conduct transactions on a lower plane of business practice than set out in this code.

Discrediting the equipment, product, methods or personnel of a competitor.

Quoting fictitiously high prices at the outset of a transaction, and lowering them without proportional changes in quantity or specifications.

Taking advantage of a customer's ignorance to sell him something that is not best suited to his needs.

Only an unethical buyer will disclose to a competitor material conditions of a competing proposal, such as price, terms, delivery, production, etc. Only an unethical competitor will procure or use such disclosures to meet competition.

II.

THE REWARD of business for service rendered is a fair profit plus a safe reserve, commensurate with risks involved and foresight exercised.

Booking orders so far in advance of production that changes in costs cannot reasonably be anticipated.

Neglecting the utility factor of value in making prices of high production tools.

Neglecting the cost of necessary idleness and the risk of obsolescence of design and equipment when making prices.

III.

EQUITABLE CONSIDERATION is due in business alike to capital, management, employees and the public.

Not paying wages and salaries commensurate with the ability required in workmen, and in supervisory, technological, selling and administrative staffs.

Making prices that do not adequately cover implicit costs as well as out-of-pocket expenses, and thereby depriving stockholders of returns in

keeping with the natural and unavoidable hazards of the industry.

IV.

KNOWLEDGE—thorough and specific—and unceasing study of the facts and forces affecting a business enterprise are essential to a lasting individual success and to efficient service to the public.

Failure to join in mutual education as to the facts and forces affecting the industry as a whole.

Failure to install an adequate cost and accounting system.

Quoting prices on incomplete data, or on none at all.

Giving estimates or guarantees of performance without full knowledge and specifications on all material elements affecting performance, such as

1. Degree of accuracy to which work is to be finished.

2. Degree of finish, where this is an element.

3. Characteristics of material to be fabricated.

4. Competence and skill required in operators.

5. Character of foundation necessary.

6. Character of lighting necessary.

V.

PERMANENCY and continuity of service are basic aims of business, that knowledge gained may be fully utilized, confidence established and efficiency increased.

Neglect of necessary improvements in design and manufacture.

Failure to study economic conditions inherent in the industry, and to base business policies on sound economic principles.

VI.

OBLIGATIONS to itself and society prompt business unceasingly to strive toward continuity of operation, bettering conditions of employment, and increasing the efficiency and opportunities of individual employees.

Irregularity of employment in this industry is due mainly to causes lying in the control of the industry's customers, and not within the control of the machine tool industry. Failure to study conditions and collectively to inform the industry's customers of these conditions has contributed to this irregularity.

It devolves on every machine tool builder to further the education of customers in forecasting their own needs of machine tools, and to induce them to place orders with due regard to economic conditions.

VII.

CONTRACTS and undertakings, written or oral, are to be performed in letter and in spirit. Changed conditions do not justify their cancellation without mutual consent.

Failure to adopt or conform to recognized trade terminology in listing or describing machine tools, and thus creating confusion and misunderstanding.

Quoting time of delivery without proper consideration of all reasonable conditions or without adequate production planning.

Soliciting cancellations of orders placed with competitors.

Accepting cancellations of orders taken in good faith, and in process of legal performance.

VIII.

REPRESENTATION of goods and services should be truthfully made and scrupulously fulfilled.

Selling repaired or rebuilt machines as new.

training of salesmen and the adherence to price schedules. Outstanding also was the tentative acceptance of what were called annexes to the code of business ethics adopted at the annual meeting last fall. These annexes outline how each of the 15 general principles are or may be violated in a definite way in the machine tool business.

One of the committees appointed is to secure cooperation with machine tool dealers in the wide observance of the code of ethics. Another is to work with the machinery division of the Department of Commerce in investigating the market possibilities of the railroad field. A third committee is to consider the feasibility of taking steps as an association in the general training of salesmen. A fourth committee is to ascertain the manufacturing capacity of the industry as to types of machines, and so on. The meeting was held at the Statler Hotel, Buffalo, April 29 and 30 and May 1, with President O. B. Iles, president International Machine Tool Co., Indianapolis, in the chair.

Applying the Code of Ethics

The annexes submitted by the code of ethics committee are listed in the accompanying tabulation. They

are described as covering practices, that have cropped up here and there at various times within the industry, that are destructive to ethical or business standards. So favorably were they received that a whole session was asked for at the next meeting when it is proposed to consider their permanent adoption. It was especially emphasized that they should be brought formally to the attention of the recently organized Associated Machine Tool Dealers, and the president of that body, George E. Merryweather (Motch & Merryweather Machinery Co., Cleveland), participated in the discussion. The result was the appointment of the following committee for that purpose: J. C. Carlton (Carlton Machine Tool Co., Cincinnati); J. B. Doan (American Tool Works Co., Cincinnati); W. E. Whipp (Monarch Machine Tool Co., Sidney, Ohio); F. L. Eberhardt (Gould & Eberhardt, Newark, N. J.); H. P. Dix (Wilmarth & Moran Co., Grand Rapids, Mich.).

It was pointed out that member signatures to cards of acceptances of the code with its annexes, while serving to establish self discipline in the industry, mark the arrival of a period when there is no doubt one is expected to be in good society and that a business concern not in possession of the certificate issued on sub-

ETHICS TO MACHINE TOOL INDUSTRY

as a guide in applying the code. They were adopted tentatively until the fall meeting; and a committee was appointed to secure the cooperation of the machine tool dealers.

Selling new machines as repaired or rebuilt.

Overstatements or misrepresentations concerning materials, workmanship, accuracy, performance, weight, working range or size of any machine or of any part thereof.

Issuing price lists with fictitiously high or otherwise untruthful prices quoted therein.

Permitting any misrepresentation by employees contacting with customers or suppliers.

IX.

WASTE in any form—of capital, labor, services, materials or natural resources—is intolerable and constant effort will be made toward its elimination.

Taking in used machinery at prices too high to give a fair profit realization, as part payment for new machines.

Encouraging speculative stocking by dealers.

Speculative stocking by builders, leading to great losses through obsolescence.

Guaranteeing buyers against declines in price.

Creating unnecessary sizes and styles, thereby wastefully increasing costs and investments and wastefully reducing stock turnover.

Failure to join in reasonable standardization of tool holding and work holding elements, which would reduce waste for the user by reducing his investment in cutting tools and accessories.

X.

EXCESSES of every nature—inflation of credit, over-expansion, over-buying, over-stimulation of sales—which create artificial conditions and produce crises and depressions are condemned.

Refusal to join in the collection and

dissemination of facts, which knowledge alone can prevent such excesses from getting under way.

Granting credits for excessively long terms.

XI.

UNFAIR COMPETITION, embracing all acts characterized by bad faith, deception, fraud or oppression, including commercial bribery, is wasteful, despicable and a public wrong. Business will rely for its success on the excellence of its own service.

Granting individual demands for free service, discriminating terms, discriminating prices, extra attachments, or any other thing or service that is not openly offered to all buyers who may be in the market at a given time.

Copying or using designs of others, thereby depriving them of the legitimate fruits of their own labor or inventive ability.

Threatening suits for patent infringement without good faith, for purposes of intimidation.

Tampering with and misadjusting a competitor's machine to discredit it with a purchaser.

Selling goods at or below cost to embarrass a competitor.

Combining to enhance or maintain prices or to bring about substantial uniformity in prices, or to divide territory or business or to put a competitor out of business.

Quoting prices on combinations, in which competitive machines are underpriced and non-competitive machines are correspondingly overpriced.

XII.

CONTROVERSIES will, where possible, be adjusted by voluntary agreement or impartial arbitration.

Causing unnecessary litigation, or

refusing to discuss disputed matters in a spirit of friendly adjustment, or to submit to impartial arbitration where it is possible.

XIII.

CORPORATE FORMS do not absolve from or alter the moral obligations of individuals. Responsibilities will be as courageously and conscientiously discharged by those acting in representative capacities as when acting for themselves.

Claiming that unethical actions are due to pressure from boards of directors, or creditors, and seeking to justify them on that account.

XIV.

LAWFUL COOPERATION among business men and in useful business organizations in support of these principles of business conduct is commended.

Failure to maintain a friendly attitude toward competitors, and accepting without verification reports that reflect on their honesty of intent, purpose or act.

Failure to assist in improving conditions in the industry by contributing information respecting economic facts that would assist all the industry to arrive at sound conclusions, without injury to the legitimate interest of anyone contributing such information.

Failure to contribute one's fair share to the support of the industry's association.

Failure to give the collective industry the benefit of one's counsel and advice on questions affecting the whole industry.

XV.

BUSINESS should render restrictive legislation unnecessary through so conducting itself as to deserve and inspire public confidence.

Failure to build machines in conformity to standard safety codes, duly adopted.

Conducting any association activity in such a manner as to violate the laws of the land.

scribing should properly be shown the cold shoulder in business dealings. The further thought was expressed that the unethical buyer could be reported to association headquarters, and steps taken to reach the disciplining committee of the association of which the buyer may be a member or even the Chamber of Commerce of the United States, assuming the buyer is a signatory of the code of ethics. The code to which the annexes mentioned were attached is that of the national chamber. The code movement was mentioned also as giving a disciplinary as well as informational function to trade associations, and by that fact helping to keep them as important business instruments. Out-siders, it was added, are not likely to be very successful or to avoid drawing the scorn of customers and fellow manufacturers. The code of ethics committee of the association is composed of H. M. Lucas (Lucas Machine Tool Co., Cleveland), chairman; Fred L. Eberhardt and August H. Tuechter (Cincinnati Bickford Tool Co., Cincinnati).

Studying Railroad Machinery Market

Marketing research came in for considerable attention. Three regional committees reported, committees coming into being as a result of regional meetings of the association held between general meetings.

The central committee, H. W. Bockhoff (National Automatic Tool Co., Richmond, Ind.); Ralph B. Busch (Cisco Machine Tool Co., Cincinnati), and George P. Gradolf (Cincinnati Bickford Tool Co., Cincinnati), outlined possibilities of getting valuable data as to equipment of railroad shops by utilizing the valuation records of the Interstate Commerce Commission. The suggestion included studies of class I railroads having 100 or more locomotives, obtaining equipment valuation per locomotive and ascertaining relative cost of repairs as an index of efficiency or age of machinery in different cases. The committee would cover also the work done by the locomotives—tractive effort and days of service or number of miles run—and generally look into the absolute age of machines.

It developed in the discussion that some progress has already been made with the assistance of the machinery division of the Department of Commerce. The point was also made that rather than individual roads being centered on, nothing smaller than regional groups of roads should be considered, thus to avoid undue focussing on a given system in respect to the antiquity or unsuitableness of its machining equipment, as there was no desire to arouse antipathies. The grinding committee of the association requested the executive committee to consider some plan for financing railroad purchases, such as an acceptance corporation organized among the machine tool builders. At present there is no financing plan on which banking institutions can advance money as they can in connection with equipment certificates for rolling stock.

Subsequently, the following committee was appointed to work with the Department of Commerce: J. E. Andress (Barnes Drill Co., Rockford, Ill.); C. L. Cameron (Gould & Eberhardt, Newark); Edward P. Welles (Charles H. Besly & Co., Chicago); H. B. Kraut (Giddings & Lewis Machine Tool Co., Fond du Lac, Wis.), and G. P. Gradolf.

To Investigate Advertising

The Eastern committee on marketing research, W. T. Montague (Norton Co., Worcester); Henry Buker (Brown & Sharpe Mfg. Co., Providence), and C. L. Cameron, emphasized the need of developing new uses for given types of machines, recognizing the competition, in certain classes of work, of the planing machine and the milling machine, of the grinding machine and the lathe, of the grinding machine and the milling machine. Broad standardization, it believed, is limited, because it is difficult to get builders together except on very minor matters. Accordingly, it reported that in the order here stated the association should take up: (1) advertising methods and results; (2) capacity of machine tool building plants by types, as giving valuable information calculated to prevent over expansion; (3) methods of distribution, such as direct selling

against agency selling, the control of automobiles for sales forces, and the like.

As to the matter of advertising, the committee was of the opinion that the general manager should call on key men and gather such information as: (a) what trade paper is most widely read and wields chief influence in determining machine tool sales; (b) size of advertising display, such as 2 pages against 1 or 1 against ½ page; (c) what material in advertising is most appealing—for example, production records or design matters; (d) value of direct mail advertising; (e) needs of following industries by direct calls on them: automobile, electrical, locomotive, rolling mills and the machine tool industry itself. The report recognized specifically the market research work of *Automotive Industries*, *THE IRON AGE* and the McGraw-Hill Co., but held the association should have its own surveys.

Immediately following, the session took up two reports on advertising and voted an appropriation for further association advertising writing for a period of about six months. Rarely in an association gathering has so much interest been manifest as there was in this, particularly in what may be styled the earnest scientific approach to the subject. The general advertising report described the achievements in securing constructive publicity for the industry. It was presented by H. S. Robinson (Cincinnati Shaper Co.). The other members were: Frederick B. Heitcamp (Cincinnati Milling Machine Co.), and E. P. Blanchard (Bullard Machine Tool Co., Bridgeport, Conn.).

Mr. Blanchard also addressed the meeting, dwelling on the need of emphasizing the investment feature of the machine tool in advertising. Such points were also brought out that not so much should features and details be stressed as what a machine will do or what it will earn for the buyer, making him think in terms of production. The majority of salesmen, it seemed to be agreed, do not "get the story across."

The meeting voted to accept the recommendation of its Eastern committee on marketing research, and the advertising committee now comprises besides Messrs. Blanchard, Heitcamp and Robinson, Ralph B. Busch and Henry Buker. It has been given also another duty. Early in the meeting, C. L. Cameron argued there was need of general publicity of a broad nature, such as could be obtained by representatives of the industry delivering addresses, presenting papers before associations or contributing articles to the press. The meeting approved of his plan of committee activity in this direction, working with the general manager of the association, and the advertising committee named was given the assignment.

Training the Salesman

The only address by one outside the association was a discussion of the training of salesmen by Dr. W. W. Charters, professor of marketing, University of Pittsburgh, Pittsburgh. He emphasized particularly that salesmen are not necessarily born, but that training is a very important factor. One out of ten has natural ability; two or three fail to show capacity for selling, leaving six or seven with little or no in-born talent but capable through training of becoming highly satisfactory. His talk was highly convincing through the recounting of actual experiences. He put particular emphasis on the failure of the executive to appreciate that his chief function is to train those under him. He must, of course, be a planner and an administrator, but the most successful sales executive of his type finds that continuing training essential. The successful salesman, he said, is one who thinks first of service to his customer with secondary consideration of his own salary. He put much stress on training as making it possible to develop personality, an important item, as a good salesman is two parts personality plus one part training.

An active discussion followed looking in part to considering if it would be feasible for the association to take on a training function within the organization. Among other things, H. W. Dunbar, assistant general sales manager Norton Co., described his company's plan of salesmen training. Finally it was decided to appoint a committee to look into the subject, as follows: H. W.

Dunbar, chairman; Porter Essley, Cleveland Planer Co., as the connecting link with the organization of dealers; W. G. Nevin, Landis Tool Co., Waynesboro, Pa.; Henry K. Spencer, Blanchard Machine Co., Cambridge, Mass., and H. S. Robinson, Cincinnati Shaper Co.

Industry Barometer and Other Matters

The basis of the machine tool barometer devised by General Manager DuBrul was discussed at some length. The talk revolved chiefly around the question of the period which should be taken as the base for comparison. At present the average rate of business in the first quarter of 1920 is used, and there were various other periods suggested. The result was that a committee of three was appointed to report at the next meeting, made up of Ralph E. Flanders, Jones & Lamson Machine Co., Springfield, Vt., Frederick V. Geier, Cincinnati Milling Machine Co., Cincinnati, and Mr. Foster, Norton Co.

The report of the lathe committee of the association indicated progress, at least in an expressed desire to eliminate certain sizes. It appears that some lathe makers advance 1 in. at a time in the matter of swing from 9 in. up to 30 in.

Another committee reported as opposed to any association catalog for any domestic distribution.

The committee to investigate capacity of the separate plants of the industry, in accordance with a decision of the board of governors, and with the approval of the meeting, is as follows: H. W. Bockhoff, National Automatic Tool Co., Richmond, Ind.; C. A. Hoefer, Hoefer Mfg. Co., Inc., Freeport, Ill.; W. T. Montague, Norton Co.; and G. A. Markusson.

Conditions in South America were discussed at some length in a paper presented by C. F. Meyer, foreign sales manager Landis Machine Co., Waynesboro, Pa. The paper was discussed in part by W. H. Rastall, chief of the machinery division, Department of Commerce,

who pointed out that while 20 per cent of the production of American machine tool plants has been and can be sold abroad, foreign business problems do not get 20 per cent of the attention of the executives. With the industry operating today, as he calculated, at 40 per cent of capacity, exports would then amount to 8 per cent. Meanwhile, England and Germany have been able commonly to do twice as well as the United States, and on the whole he questioned whether or not the American manufacturer had an adequate foreign sales organization. He sensed that there was a turn in foreign trade and that the present was a time to organize thoroughly for it.

One Price Regardless of Size of Order

The advantages of the one-price policy were discussed at length by Howard W. Dunbar, assistant general sales manager Norton Co., Worcester. "The practice of shading prices from the published list," said he, "frequently causes other strong concerns to issue new lists on lower levels, bringing the whole price scale to a level more nearly to the point of production costs, and prices once brought down are hard to raise. Today we have scarcely made an impression, in bringing prices back to their proper levels, because of the influences of the sharp reductions in '21."

"Sliding scale prices for quantity purchasers appear to me not to be any part of the machine tool selling program. Legitimately such differentials in price can be offered for quantity purchasers in commodities less highly specialized than machine tools."

"Consumers of large batteries of machines are usually the ones to demand better service, more service, improvements in design, omissions or additions in standard equipment, and special adaptations to meet particular conditions. They demand the high-powered salesman, as well as the high-duty production tool, which costs more in engineering and money to develop."

Production Control in Automobile Manufacture to Be Discussed

Three sessions devoted to problems of the automobile industry will be a feature of the meeting of the Taylor Society, to be held under the auspices of the University of Michigan at Ann Arbor, Mich., May 14, 15 and 16.

These sessions are to be held in the morning, afternoon and evening of Friday, May 15. A paper on "Production Control in Automobile Manufacture," by L. J. Purdy, production supervisor, Oakland Motor Car Co., Pontiac, Mich., will be presented at the morning session, which will be presided over by H. H. Seeley, vice-president Motor Products Corporation, Detroit. Among those to lead the discussion are E. K. Wennerlund, General Motors Corporation, Detroit; R. G. Scott, H. H. Franklin Mfg. Co., Syracuse; R. T. Kent, New York.

Two outstanding problems of policy in the automobile industry have been selected for discussion at the afternoon session. These will be presented in a paper on "Frequency of Change of Model," by T. J. Little, Jr., chief engineering department, Lincoln division, Ford Motor Co., Dearborn, Mich., and in another on "Should Automobile Manufacturers Make Their Own Accessories?" by J. H. Marks, purchasing agent Packard Motor Car Co., Detroit. It is pointed out that it is not likely that the industry is yet prepared to give a definite answer with respect to these problems, but that the sure method of arriving at definite answers is through interchange of experience and of judgment. The consensus of experience and judgment to date should be of interest. H. H. Rice, assistant to the president General Motors Corporation, Detroit, will preside at this session, and among those to take part in the discussion are E. J. Poag, Buick Motor Co., Flint, Mich., and F. C. Shafer, Pemberty Injector Co., Detroit.

Addresses on the "Tendencies Affecting Methods of Management in the Automobile Industry" are planned

for the evening, the speakers being J. H. Collins, merchandising director Chilton Class Journal Co., Philadelphia, and H. M. Jewett, president Paige-Detroit Motor Car Co., Detroit. James Inglis, president of the American Blower Co., Detroit, will preside, and O. E. Hunt, chief engineer Chevrolet Motor Co., Detroit, and E. A. De Waters, chief engineer Buick Motor Co., Flint, Mich., will take part in the discussion.

One of the sessions on May 14 will be devoted to the management problem from the point of view of the banker-investor. There will also be a session on industrial psychology, at which a paper will be presented by C. S. Yoakum, professor of personnel management, University of Michigan, on "Experimental Psychology in Personnel Problems." This is the third of the societies continuing series of studies in industrial psychology. A session on office management has been arranged, with Dr. H. S. Person, managing director of the society, presiding. Attendants at the meeting will be invited to be guests at the Michigan-Minnesota baseball game to be played Saturday afternoon, May 16.

Low Price on Basic Pig Iron

YOUNGSTOWN, May 5—During the past week a merchant iron interest in the Mahoning Valley shipped a tonnage of basic iron under a contract accepted last December, at a price of \$20 per ton, furnace. In the meantime, however, this same interest has taken basic iron business on a basis of \$19, furnace. Merchant producers in this district have figured in the past few days on an inquiry for 700 tons of iron, including 500 tons of No. 3 foundry and 200 tons of No. 2 foundry, for delivery over the second half.

Replacements and improvements are being made by the Niles Steel Products Co., Niles, Ohio, following a recent fire which caused a loss of \$5,000.

APRIL IRON OUTPUT

Net Loss of 25 Furnaces—30 Shut Down and 5 Blown In

Daily Rate 6343 Tons Less Than March, a Decrease of 5.5 Per Cent

Blast furnace operations in April were at a considerably reduced rate from that of February and March. The April output at 108,632 tons per day was back to the January volume. The extent of the curtailment, already evident late in March, is revealed by the net loss of 25 furnaces.

The production of coke pig iron for the 30 days in April amounted to 3,258,958 gross tons or 108,632 tons per day as compared with 3,564,247 tons or 114,975 tons per day for the 31 days in March. This is a decrease of 6343 tons per day in April or about 5.5 per cent.

There were 30 furnaces blown out or banked and 5 blown in, a net loss of 25, bringing the number of furnaces active on May 1 to 220. The estimated daily capacity of these 220 stacks on May 1 was 103,080 tons, compared with 112,380 tons per day for the 245 furnaces active on April 1.

Furnaces In and Out

The following furnaces were blown in during April:

One Low Moor furnace in Virginia; one Haselton furnace in the Mahoning Valley; the Belfont furnace in southern Ohio; the new furnace of the Youngstown Sheet & Tube Co. at Indiana Harbor; one Colorado furnace in Colorado.

The principal furnaces blown out or banked during April were the following:

One Buffalo and one Lackawanna furnace in the Buffalo district, and No. 2 Northern furnace in New York; one Worth furnace in the Schuylkill Valley; one Steelton furnace in the lower Susquehanna Valley; three Edgar Thomson, one Clairton and one Edith furnace of the Carnegie Steel Co., two Eliza furnaces of the Jones & Laughlin Steel Corporation, one Monessen furnace and the Clinton furnace in the Pittsburgh district; one Shenango furnace and three

Daily Average Production of Coke and Anthracite Pig Iron in the United States by Months Since Jan. 1, 1919—Gross Tons

	1919	1920	1921	1922	1923	1924	1925
Jan.	106,525	97,234	77,945	53,063	104,181	97,384	108,720
Feb.	105,006	102,720	69,187	58,214	106,935	106,026	114,791
Mar.	99,685	108,900	51,468	65,675	113,673	111,809	114,975
Apr.	82,607	91,327	39,768	69,070	118,324	107,781	108,632
May	68,002	96,312	39,394	74,409	124,764	84,358	.....
June	70,495	101,451	35,494	78,701	122,548	67,541	.....
July	78,340	98,931	27,889	77,592	118,656	57,577	.....
Aug.	88,496	101,529	30,780	58,586	111,274	60,875	.....
Sept.	82,932	104,310	32,850	67,791	104,184	68,442	.....
Oct.	60,115	106,212	40,215	85,092	101,586	79,907	.....
Nov.	79,745	97,830	47,183	94,990	96,476	83,656	.....
Dec.	84,944	87,222	53,196	99,577	94,225	95,539	.....
Year	83,789	99,492	45,325	73,645	109,713	85,075	.....

Production of Steel Companies—Gross Tons

	Total Production†		Spiegeleisen and Ferromanganese*			
	1924	1925	Fe-Mn	Spiegel	Fe-Mn	Spiegel
Jan.	2,274,005	2,692,537	20,735	7,948	23,578	5,418
Feb.	2,410,658	2,539,785	22,405	9,870	18,184	4,910
Mar.	2,674,565	2,812,995	22,351	13,796	20,062	5,449
Apr.	2,463,027	2,514,828	23,580	4,240	21,448	5,341
May	1,927,461	.....	14,993	9,336	.....	.....
June	1,507,110	.....	20,049	9,405	.....	.....
½ year	13,256,826	.....	124,113	54,595	.....	.....
July	1,343,952	.....	14,367	15,328	.....	.....
Aug.	1,413,314	.....	10,718	8,010	.....	.....
Sept.	1,509,360	.....	13,263	5,033	.....	.....
Oct.	1,858,502	.....	7,780	10,047	.....	.....
Nov.	1,896,886	.....	13,448	8,835	.....	.....
Dec.	2,377,141	.....	21,220	5,284	.....	.....
Year	23,656,981	.....	204,909	107,132	.....	.....

*Includes output of merchant furnaces.

†Ferromanganese and Spiegeleisen included.

Pig Iron Production by Districts, Gross Tons

	April (30 days)	March (31 days)	Feb. (28 days)	Jan. (31 days)
New York	192,405	217,038	207,012	205,203
New Jersey	.....	.....	.....	.....
Lehigh Valley	81,612	81,610	72,616	79,155
Schuylkill Valley	67,030	86,622	82,104	88,522
Lower Susquehanna and Lebanon Valleys	40,191	46,580	36,609	40,816
Pittsburgh district	668,623	785,487	709,709	754,675
Shenango Valley	125,322	163,222	142,088	160,128
Western Pa.	135,366	150,571	130,175	143,502
Maryland, Virginia and Kentucky	94,550	102,205	76,978	81,614
Wheeling district	126,385	142,323	136,237	141,546
Mahoning Valley	319,973	339,160	316,679	329,757
Central and Northern Ohio	306,483	315,802	292,109	318,872
Southern Ohio	42,999	39,804	42,601	46,732
Illinois and Indiana	635,479	703,000	622,987	620,574
Mich., Minn., Mo., Wis., Colo. and Utah	130,840	130,128	115,315	120,892
Alabama	285,351	253,820	224,679	231,465
Tennessee	6,349	6,875	6,245	6,883
Total	3,258,958	3,564,247	3,214,143	3,370,336

Coke and Anthracite Furnaces in Blast

Location of Furnaces	Total Stacks	May 1		April 1	
		In Blast	Capacity per Day	In Blast	Capacity per Day
New York:					
Buffalo	22	12	5,590	14	6,290
Other New York	5	0	.....	1	535
New Jersey	4	0	.....	0	.....
Pennsylvania:					
Lehigh Valley	12	6	2,540	6	2,455
Spiegel	2	1	175	1	175
Schuylkill Valley	15	6	2,070	7	2,520
Lower Susquehanna	9	2	875	3	1,200
Ferromanganese	1	1	70	1	70
Lebanon Valley	4	1	195	1	215
Ferromanganese	2	0	.....	0	.....
Pittsburgh District	53	39	19,700	48	24,180
Ferro and spiegel	4	2	435	2	360
Shenango Valley	16	8	3,475	12	5,260
Western Pa.	21	10	4,470	11	4,850
Ferro and spiegel	2	1	45	0	.....
Maryland	5	4	1,995	5	2,165
Ferromanganese	1	1	90	1	100
Wheeling District	14	9	4,190	10	4,590
Ohio:					
Mahoning Valley	23	19	10,200	20	10,650
Central and Northern	25	17	9,780	18	10,180
Southern	14	5	1,430	4	1,280
Illinois and Indiana	43	34	20,510	38	21,800
Mich., Wis. and Minn.	12	7	2,825	7	2,930
Colo., Mo. and Utah	6	4	1,850	3	1,260
The South:					
Virginia	17	2	345	2	340
Ferromanganese	1	1	75	1	85
Kentucky	7	2	670	2	700
Alabama	39	24	9,270	24	7,875
Ferromanganese	1	0	.....	1	95
Tennessee	14	2	210	2	220
Total	399	220	103,080	245	112,380

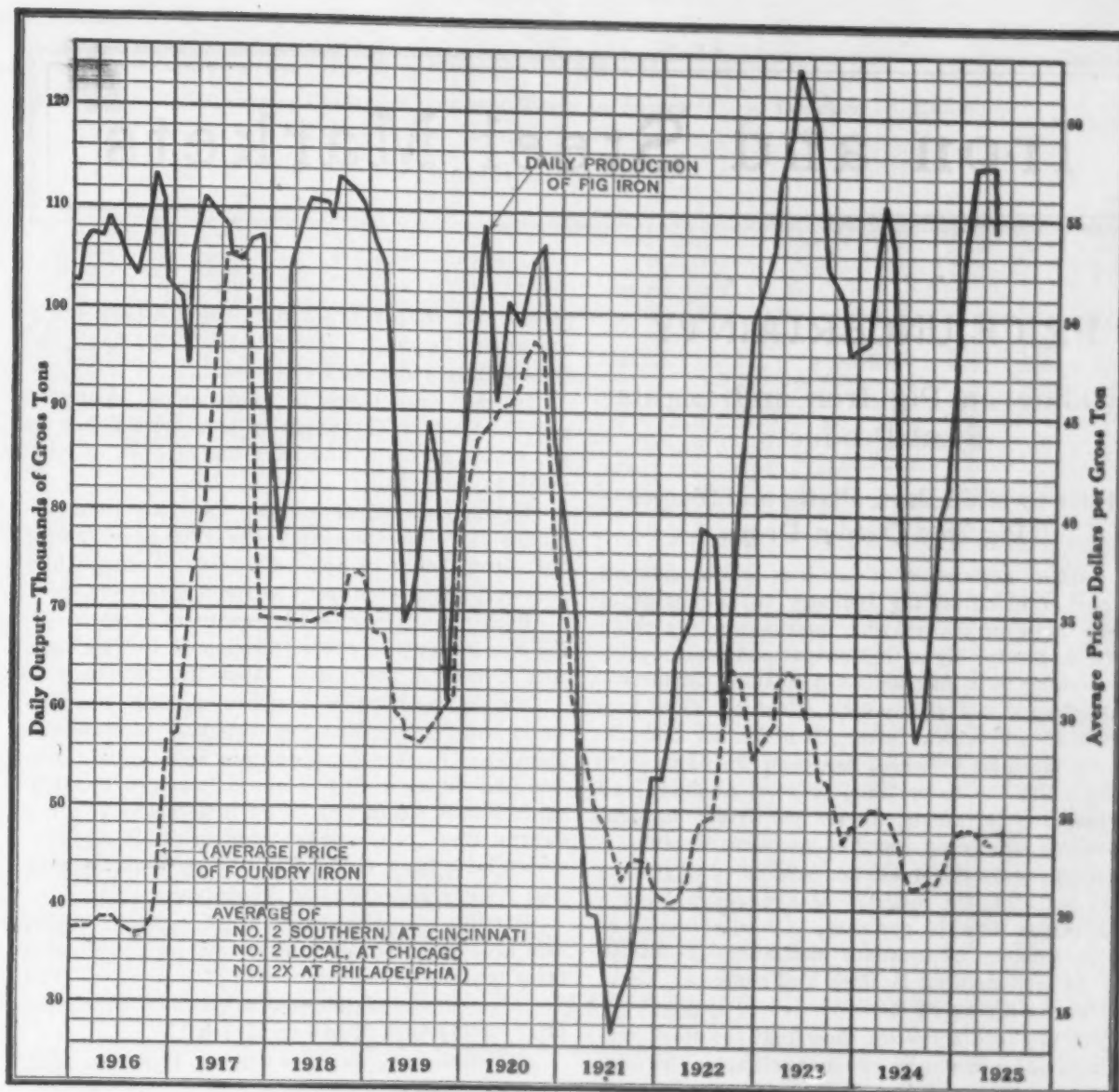
Production of Coke and Anthracite Pig Iron in United States by Months, Beginning Jan. 1, 1921—Gross Tons

	1921	1922	1923	1924	1925
Jan.	2,416,292	1,644,951	3,229,604	3,018,890	3,370,336
Feb.	1,937,257	1,629,991	2,994,187	3,074,757	3,214,143
Mar.	1,595,522	2,035,920	3,523,868	3,466,086	3,564,247
Apr.	1,193,041	2,072,114	3,549,736	3,293,428	3,258,958
May	1,221,221	2,306,679	3,867,694	2,615,110	.....
June	1,064,833	2,361,028	3,676,445	2,026,221	.....
½ year	9,428,166	12,050,683	20,841,534	17,434,492	.....
July	864,555	2,405,365	3,678,334	1,784,899	.....
Aug.	954,193	1,816,170	3,449,493	1,887,145	.....
Sept.	985,529	2,033,720	3,125,512	2,053,264	.....
Oct.	1,246,676	2,637,844	3,149,158	2,477,127	.....
Nov.	1,415,481	2,849,703	2,894,295	2,509,673	.....
Dec.	1,649,086	3,086,898	2,920,982	2,961,702	.....
Year*	16,543,686	26,880,383	40,059,308	31,108,302	.....

*These totals do not include charcoal pig iron. The 1924 production of this iron was 212,710 tons.

Daily Rate of Pig Iron Production by Months—Gross Tons

	Steel Works	Merchant	Total
April, 1924	82,101	25,680	107,781
May	62,176	22,182	84,358
June	50,237	17,304	67,541
July	43,353	14,224	57,577
August	45,591	15,284	60,875
September	50,312	18,130	68,442
October	59,952	19,955	79,907
November	63,230	20,426	83,656
December	76,682	18,857	95,539
January, 1925	86,856	21,864	108,720
February	90,707	24,084	114,791
March	90,741	24,234	114,975
April	83,827	24,805	108,632



Pig Iron Output Declined Sharply in April; Prices Also Lower

Carnegie furnaces in the Shenango Valley; the Covington furnace in Virginia, one Bethlehem furnace in Maryland, one Carnegie furnace in the Wheeling district, the Mary furnace and one Carnegie furnace in the Mahoning Valley; one Central furnace in northern Ohio; four furnaces of the Illinois Steel Co., and the old Indiana Harbor furnace in the Chicago district, and one Sloss-Sheffield furnace in Alabama.

Now 399 Blast Furnaces in Country

The two Shoenberger blast furnaces of the American Steel & Wire Co.'s plant in the Pittsburgh district are being dismantled.

The Atlantic blast furnace of the Republic Iron & Steel Co. in the Shenango Valley is being torn down.

One of the 10 furnaces at the Cambria plant of the Bethlehem Steel Corporation, Johnstown, Pa., is being dismantled.

The new blast furnace of the Youngstown Sheet & Tube Co. at Indiana Harbor, Ind., was blown in about a month ago.

These changes bring the total number of coke blast furnaces in the country which are regarded as capable of making pig iron to 399.

Employees of the Virginia Bridge & Iron Co., in plants located at Roanoke, Va., Memphis, Tenn., and Birmingham, numbering more than 1000, have subscribed to a group life insurance plan involving \$1,085,000, employees and employer participating in the payment of premiums.

THE country's needs in pig iron, based on the gradual expansion of production over a term of years, are today theoretically 100,750 tons per day. In January, 1924, the theoretical daily needs were 97,950 tons. In the interval, actual production has been deficient or in excess as shown by the length of the bars on either side of the vertical line. A bar length of 1 in. is equivalent to 25,000 tons.

March needs, 100,475 tons a day; production, 114,975; excess of production, 14,500 tons.
April needs, 100,657 tons a day; production, 108,632; excess of production, 7,975 tons.

Deficiency

Excess

Jan.
Feb.
March
April
May
June
July
Aug.
Sept.
Oct.
Nov.
Dec.
Jan.
Feb.
March
April



Iron and Steel Markets

PRICE UNCERTAINTY

Yielding on Pig Iron and Lighter Steel Products

Efforts to Hold Bars, Plates and Shapes—Pig Iron Output Drops

Further restriction of pig iron and steel ingot output is bringing the industry to the point at which both producers and buyers are searching more closely for signs that output and consumption are coming into balance. On heavier products—bars, shapes and plates—the effort by some producers to get 2.10c., rather than 2c., on the prevailing small-lot business, has been no stimulus to buying. At the same time, in wire products and particularly in sheets, there are fresh declines, 3.20c. and less being reported on black sheets.

With the Steel Corporation now running at close to 75 per cent, the industry as a whole is doing a trifle better than 70 per cent. Consumption is at a high rate, by all ordinary measurements, except that oil well drilling is slack and some car works have begun laying off men.

The pig iron statistics show that the steel companies made a summary cut in April after the peak of March. The net loss last month was 25 furnaces—15 by the Steel Corporation, 6 by the independents and 4 by the merchant producers.

At 3,258,958 tons for the 30 days, April pig iron output averaged 108,632 tons a day, as against 3,564,247 tons in March, or 114,975 tons a day.

On May 1 the 220 furnaces in blast had a capacity of 103,080 tons a day, against 112,380 tons a day for the 245 furnaces active on April 1, representing a falling off of 8 per cent in the month.

In casting up the prospects for the next three months, Chicago mills stress the more favorable building prospects, with about 250,000 tons of Western work in sight, and the expectation that large car orders will be placed against the needs of fall traffic.

The activity at automobile plants is immediately encouraging, the current daily rate being 16,000 cars, of which the leading maker is turning out 8100.

Some steel companies have had a better run of new business in the past week, but that report is not sufficiently uniform to indicate a turn, uncertainty as to prices being still a large factor.

Chicago reports that any confusion as to finished steel prices there is due to the pressure of Pittsburgh and Ohio competition. While bars are 2.10c. in the Chicago district itself, and

plates and shapes are 2.20c., the Chicago mills are having to meet a lower basis at St. Louis, in the Southwest and the Northwest.

In the East there is evidence of withheld specifications, with buyers in some cases able to get plates at 1.90c. and bars and shapes at concessions from 2c.

Equipment orders in the railroad field included 13 locomotives and over 1200 cars, 300 of the latter being of the refrigerator type, while 800 were mine cars and 150 for sugar cane.

Bookings of fabricated structural steel covering the larger size projects reported to THE IRON AGE showed a fair total—about 22,000 tons.

Keener competition between eastern Pennsylvania and Buffalo furnaces, especially in New England, has further depressed pig iron prices, Buffalo iron selling at \$19 or less and eastern Pennsylvania iron at about \$20. With little activity in the Central West, recent prices prevail, as a rule. Silveries have been reduced \$1. Very little foreign iron is coming in except to fill contracts.

Further reduction, the seventh in seven weeks, has brought THE IRON AGE pig iron composite price to \$20.63, in place of \$20.71 last week. The seven successive drops have aggregated \$1.50, the price having been \$22.13 on March 17.

Finished steel, as measured by THE IRON AGE composite price, has dropped to 2.460c. per lb., from 2.474c. last week. This equals the low point of last October; aside from that, there has been no equally low figure since January of 1923.

Pittsburgh

Consumption Still High, Production Decreasing, and Prices Not Certain

PITTSBURGH, May 5.—In the whole range of the iron and steel trade the markets have been particularly dull in the past week—in coke, scrap, pig iron, semi-finished steel and finished steel products. There have been no crucial developments and few of any interest at all. Consumption of steel continues at a high rate, according to all reports from consuming industries, except that oil well drilling is much less active than was expected, and some of the freight car shops have begun laying off men. Steel producers expect some of the railroads to come to the aid of the car shops at this juncture, as they have done so often in the past two or three years, because it is to the interest of the railroads that the car shops be enabled to maintain their organization, while at the same time the shops are ready to make especially close prices just now.

A gradual curtailment of production, begun six

A Comparison of Prices

Advances Over the Previous Week in Heavy Type, Declines in Italics
At date, one week, one month, and one year previous

For Early Delivery

Pig Iron, Per Gross Ton:	May 5, 1925	Apr. 28, 1925	Apr. 7, 1925	May 6, 1924
No. 2X, Philadelphia...	\$21.76	\$22.26	\$23.26	\$22.76
No. 2, Valley Furnace...	20.00	20.00	20.50	21.00
No. 2, Southern, Cin'tit...	24.05	24.05	24.05	26.05
No. 2, Birmingham, Ala.†...	20.00	20.00	20.00	22.00
No. 2 foundry, Chicago*	22.00	22.00	23.00	23.00
Basic, del'd, eastern Pa...	21.00	21.00	22.75	21.00
Basic, Valley furnace...	20.00	20.00	20.50	21.00
Valley Bessemer del. P'gh.	22.76	22.76	23.26	24.26
Malleable, Chicago*	22.00	22.00	23.00	23.00
Malleable, Valley	20.00	20.50	21.00	21.50
Gray forge, Pittsburgh...	21.26	21.26	21.76	22.26
L. S. charcoal, Chicago...	29.04	29.04	29.04	29.15
Ferromanganese, furnace...	115.00	115.00	115.00	107.50

Rails, Billets, Etc., Per Gross Ton:	May 5, 1925	Apr. 28, 1925	Apr. 7, 1925	May 6, 1924
O.-h. rails, heavy, at mill...	\$43.00	\$43.00	\$43.00	\$43.00
Bess. billets, Pittsburgh...	35.50	35.50	35.50	40.00
O.-h. billets, Pittsburgh...	35.50	35.50	35.50	40.00
O.-h. sheet bars, P'gh...	37.00	37.00	37.00	41.00
Forging billets, base, P'gh.	40.50	40.50	41.00	45.00
O.-h. billets, Phila...	41.17	41.17	41.67	43.17
Wire rods, Pittsburgh...	46.00	46.00	48.00	51.00
Skelp, gr. steel, P'gh, lb...	2.00	2.00	2.00	2.25
Light rails at mill...	1.75	1.75	1.80	2.00

Finished Iron and Steel,

Per Lb. to Large Buyers:	Cents	Cents	Cents	Cents
Iron bars, Philadelphia...	2.22	2.22	2.28	2.52
Iron bars, Chicago...	2.10	2.10	2.10	2.30
Steel bars, Pittsburgh...	2.00	2.00	2.10	2.25
Steel bars, Chicago...	2.10	2.10	2.20	2.35
Steel bars, New York...	2.34	2.34	2.44	2.59
Tank plates, Pittsburgh...	2.00	2.00	2.00	2.20
Tank plates, Chicago...	2.20	2.20	2.30	2.45
Tank plates, New York...	2.24	2.24	2.34	2.49
Beams, Pittsburgh...	2.00	2.00	2.10	2.25
Beams, Chicago...	2.20	2.20	2.30	2.45
Beams, New York...	2.34	2.34	2.44	2.59
Steel hoops, Pittsburgh...	2.40	2.40	2.40	2.75

*The average switching charge for delivery to foundries in the Chicago district is 61c. per ton.

†Silicon, 1.75 to 2.25. ‡Silicon, 2.25 to 2.75.

On export business there are frequent variations from the above prices. Also, in domestic business, there is at times a range of prices on various products, as shown in our market reports on other pages.

Sheets, Nails and Wire,	May 5, 1925	Apr. 28, 1925	Apr. 7, 1925	May 6, 1924
Per Lb. to Large Buyers:	Cents	Cents	Cents	Cents
Sheets, black, No. 28, P'gh.	3.30	3.30	3.40	3.40
Sheets, black, No. 28, Chi-				
cago dist. mill...	3.40	3.50	3.60	...
Sheets, galv., No. 28, P'gh.	4.30	4.40	4.50	4.80
Sheets, galv., No. 28, Chi-				
cago dist. mill...	4.50	4.60	4.70	...
Sheets, blue, 9 & 10, P'gh.	2.40	2.40	2.60	2.80
Sheets, blue, 9 & 10, Chi-				
cago dist. mill...	2.50	2.50	2.70	...
Wire nails, Pittsburgh...	2.75	2.75	2.85	3.00
Wire nails, Chicago dist.				
mill...	2.85	2.85	2.95	...
Plain wire, Pittsburgh...	2.50	2.50	2.60	2.75
Plain wire, Chicago dist.				
mill...	2.60	2.60	2.70	...
Barbed wire, galv., P'gh...	3.45	3.45	3.55	3.80
Barbed wire, galv., Chicago				
dist. mill...	3.55	3.55	3.65	...
Tin plate, 100 lb. box, P'gh.	\$5.50	\$5.50	\$5.50	\$5.50

Old Material, Per Gross Ton:

Carwheels, Chicago	\$16.00	\$16.00	\$16.00	\$16.00
Carwheels, Philadelphia	17.00	17.50	18.00	17.00
Heavy steel scrap, P'gh...	16.00	16.50	17.50	16.50
Heavy steel scrap, Phila...	14.50	14.50	15.00	15.00
Heavy steel scrap, Ch'go...	14.75	14.75	15.00	13.50
No. 1 cast, Pittsburgh...	17.50	17.50	18.00	18.00
No. 1 cast, Philadelphia...	17.00	17.00	17.50	17.00
No. 1 cast, Ch'go (net ton)	17.00	17.00	17.50	17.50
No. 1 RR. wrot. Phila...	17.50	17.50	18.00	17.00
No. 1 RR. wrot. Ch'go (net)	13.00	13.00	13.00	12.00

Coke, Connellsville, Per Net Ton at Oven:

Furnace coke, prompt...	\$3.00	\$3.00	\$3.15	\$3.25
Foundry coke, prompt...	4.00	4.00	4.00	4.75

Metals,

Per Lb. to Large Buyers:	Cents	Cents	Cents	Cents
Lake copper, New York...	13.75	13.75	13.75	13.50
Electrolytic copper, refinery	13.37½	13.50	13.37½	13.12½
Zinc, St. Louis...	6.92½	6.92½	7.10	6.82½
Zinc, New York...	7.27½	7.27½	7.45	6.17½
Lead, St. Louis...	7.45	7.50	7.87½	7.50
Lead, New York...	7.75	7.90	8.20	7.75
Tin (Straits), New York...	\$4.68½	55.25	51.50	47.50
Antimony (Asiatic), N. Y.	13.00	11.25	13.75	8.75

THE IRON AGE Composite Prices

May 5, 1925, Finished Steel, 2.460c. Per Lb.

Based on prices of steel bars, beams, tank plates, plain wire, open-hearth rails, black pipe and black sheets. These products constitute 88 per cent of the United States output of finished steel.	April 28, 1925, 2.474c.
	April 7, 1925, 2.531c.
	May 6, 1924, 2.653c.
	10-year pre-war average, 1.689c.

May 5, 1925, Pig Iron, \$20.63 Per Gross Ton

Based on average of basic and foundry irons, the basic being Valley quotation, the foundry an average of Chicago, Philadelphia and Birmingham.	April 28, 1925, \$20.71
	April 7, 1925, 21.29
	May 6, 1924, 21.79
	10-year pre-war average, 15.72

High	Low
1923 2.824c., April 24	1923 2.446c., Jan. 2
2.789c., Jan. 15	2.460c., Oct. 14
2.788c., Feb. 26	2.460c., Nov. 3
2.560c., Jan. 6	2.460c., May 5
2.250c., Jan. 13	2.460c., May 5
Finished Steel 2.460c., May 5	2.460c., May 5
Pig Iron \$20.63, May 5	\$19.21, Nov. 3
	\$20.77, Nov. 26

weeks or more ago, is still being carried out. The Carnegie Steel Co. operated last week at 74 per cent of ingot capacity as compared with about 85 per cent in the first week of April. This week its production may be slightly less than 74 per cent, as rolling schedules are becoming somewhat erratic due to the way orders are now being received. The Carnegie company has put out one blast furnace at its Ohio Works, now having 35 active out of 58, and three of the active furnaces are making ferromanganese. The Jones & Laughlin Steel Corporation last week operated at 77 per cent and the Valley mills are holding around a 75 per cent average.

It will be interesting to see what develops from the apparently determined effort of some of the larger

producers of plates, shapes and bars to get \$2 a ton more for these products. Some orders sent in at 2c. have been turned down by one large company, which states that it does not care for orders at less than 2.10c. per lb. Efforts to boost prices in a weak market have been made before and have not been successful for the simple reason that buyers did not see things in quite the same way. The present effort recalls the price stabilization plan of former Secretary of Commerce Redfield's Industrial Board in 1919, which did not produce the result that was expected of it.

Pig Iron.—The disinclination of pig iron consumers to make commitments is as strong as ever, if not even stronger, the result being that purchases in the past week have been extremely light. A few single carloads

of Bessemer iron have been sold at the old price of \$21, Valley. In basic iron there have been no purchases and no interesting inquiry. In foundry iron sales have been insignificant in point of tonnage, there being occasional transactions in carloads to 100 tons. Sales in general have been at last week's market of \$20, Valley, but it is not denied that occasionally a seller in exceptional circumstances has made a concession from the regular figure. Malleable iron, which chanced not to decline to \$20 when foundry iron did so, has now sold at \$20, being thus quotable fifty cents lower than a week ago.

We quote Valley furnace, the freight rate for delivery to the Cleveland or Pittsburgh district being \$1.76 per gross ton:

Basic	\$20.00
Bessemer	21.00
Gray forge	19.50
No. 2 foundry	20.00
No. 3 foundry	19.50
Malleable	20.00
Low phosphorus copper free	28.50

Ferroalloys.—Trading still drags wearily, with inquiries few, small and far between and sales effort is largely a waste of time, since consumers generally are well supplied and are not at present much interested in future requirements. Whether price concession would stimulate the demand is conjectural, but at the moment there is no apparent tendency on the part of producers to try the experiment. Ore is regarded as too costly to permit any cutting of ferromanganese prices. The one bright spot about business is that consumers are taking all material they have contracted for. Prices are given on page 1379.

Semi-Finished Steel.—There is very little demand for billets either for forging or rerolling, and the same situation exists with regard to other semi-finished steel. The recent reduction of wire rods to \$46 has not increased business, and in fact the tendency is slightly the other way. Those sheet mills which are buying sheet bars at \$37 are not even getting back a whole dollar in the selling of sheets at today's market, and consequently the demand for sheet bars is at a minimum. Prices are given on page 1379.

Wire Products.—Recent reductions in the prices of wire products have not resulted in increased specifications. While the current base of 2.75c. for nails and 2.50c. for plain wire seems to be holding, buyers are not yet sure that the market will remain firm at that point and buying is being done very cautiously. A careful investigation which has recently been made by sales officials of some of the mills indicates that there are no large stocks in the hands of jobbers or retailers, and this fact leads some to believe that there will be better buying within the next month or two. Prospects in various sections of the country vary somewhat according to the crop outlook. Fence business is practically over for the spring. Prices are given on page 1379.

Rails and Track Supplies.—No action had been taken up to today on the inquiry of the New York Central for 10,000 tons of tie plates. The bids have gone in. On attractive orders lately 2.35c. per lb. has been done, but on an inquiry as large as that of the New York Central this figure may not represent the lowest that some are willing to do. Demand for miscellaneous track supplies continues in fair volume, with no outstanding characteristics. Prices are given on page 1378.

Tubular Goods.—While pipe and tube mills are not operating at capacity, the situation with regard to schedules and incoming orders is still so favorable as to single this branch of the steel industry out as one of the brightest spots. Current business is of miscellaneous character, but oil country demand is particularly good. Jobbers are cautious in ordering, but the volume of such business is nevertheless very good. Discounts are given on page 1378.

Sheets.—During the first half of April the independent sheet mills maintained an operation of about 75 per cent. In the latter half, this declined to about 70 per cent. The average for the entire industry this week is around 65 per cent. The American Sheet & Tin Plate Co. has made no further change in prices, its

reduction to 2.60c. on blue annealed having been mentioned last week. Prices quoted by independent mills are weak and lower. Buyers are seemingly bewildered by the rapidity with which prices have declined and are ordering very sparingly. Some buyers who ordinarily order about 1000 tons at a time are contenting themselves with carload or 100-ton orders and a pronounced characteristic of the situation is the number of rush shipments asked for. The automobile industry is pretty well fortified so far as the immediate future is concerned, but the requests which have come to the mills as to shipments indicate that automobile production is being speeded up. Galvanized sheets have shown a decline to 4.30c. and on black the prevailing price is 3.20c. Blue annealed ranges from 2.40c. to 2.50c.

Tin Plate.—Tin plate mills are certain of a very good operation over a greater part of the year. So far as crop prospects can be gaged at this early date, there are ample indications of a large food pack in nearly all sections. The situation in California is particularly favorable because of the unusual amount of rainfall that State has had. Stocks of canned goods have been inventoried recently and the outlook is that such stocks will last only until the new packs are on the market; hence a good demand for the products which go into tins is expected. Third quarter specifications, which must be in by May 15, are in good volume.

Cold-Finished Steel Bars.—The demand for screw stock and shafting has quickened slightly in the past week, due to speeding up of automobile production. Some of the parts makers have requested an advancing of the date of shipment so as to meet the delivery requirements of automobile manufacturers. The price holds at 2.70c., but is not being tested, as nearly all consumers are covered by contracts. Prices are given on page 1378.

Hot-Rolled Flats.—The same range of prices exists on hot-rolled flats, 2.20c. to 2.40c., the higher price applying to widths of 6 in. and narrower. Mill operations probably range from 65 to 70 per cent, and orders are coming in about the same volume as in recent weeks.

Cold-Rolled Strips.—Demand is about the same as it has been for the past few weeks, being not over 65 or 70 per cent of capacity. The price is holding at 4c.

Bolts, Nuts and Rivets.—A slightly better demand in the past week is reported by some makers of bolts, nuts and rivets, but there is no special reason to account for this. Discounts are holding firmly and are published on page 1379.

Steel and Iron Bars.—Several mills have pursued the policy mentioned a week ago of endeavoring to lift the steel bar market to a minimum of 2.10c. and have refused certain offers at less. The record of actual sales does not indicate that the market is firmed up to 2.10c. yet, but a good many small orders are going through at that figure, as formerly. The test of several good sized inquiries for this particular line is lacking. There have been sales of bars, shapes and plates combined at 2.10c. The market remains quotable at the range of 2c. to 2.10c., but with signs of its being stiffer than a week ago. Prices are given on page 1378.

Structural Material.—Fabricated steel work in the Pittsburgh district is not particularly active at the present time. Mills are making fair sized shipments of shapes against old business, but are booking only occasional orders of size against fresh structural jobs. On ordinary lots 2.10c. is being obtained, but orders of any size are likely to go at 2c., much as formerly, though in some quarters the market is held to exhibit a stiffer tone. Prices are given on page 1378.

Plates.—Plates continue to be weaker than bars or shapes in the matter of price, but mills are making some effort along the line of getting plates up to a 2.10c. basis, as they are doing in shapes and bars. Demand for plates is decidedly light in all quarters. Mills have had hardly any ship plates on books for some time past, while deliveries to the freight car shops on old orders are nearly completed. Additional freight

car buying is predicted for the near future. Prices are given on page 1378.

Coal and Coke.—The Connellsville coke market has passed through another uneventful week. With a few furnaces banked or blown out in the past two or three weeks, shipments of furnace coke on contracts have been on the down grade and an Eastern steel works furnace has just suspended shipment, intending to bank in a few days. Spot furnace coke can be had at \$3 without difficulty, but miscellaneous consumers requiring one to five carloads of particularly choice coke sometimes pay up to \$3.25. Spot foundry coke remains quotable at \$4 to \$4.50 for generally acceptable brands. In some quarters the coal market is called as dull as ever, while in other quarters it is said a little improvement in demand is seen from the closing of mines by the Pittsburgh Coal Co., which in the past week has closed five mines in addition to the six reported a week ago, leaving the company with only six union mines in operation. Prices are given on page 1379.

Old Materials.—There has been no increase in demand and prices still show a sagging tendency, with \$16 now the highest mill bid obtainable on heavy melting steel, a recession of 50c. a ton since a week ago and of at least \$6 a ton from the top price at the beginning of the year. Other steel works grades have suffered to a like extent and turnings now will not bring within \$1 a ton of the prices of last week. In a general way, the drop in prices in the past few weeks appears to be due less to the size of the offerings than to the indifference of consumers. Actually, no great weight of material is pressing on the market and the sales that are being made at present prices usually are of small lots that some dealer had to move or lots shipped to a point without order and were let go at a low price rather than be sent elsewhere and an even lower price be secured on account of the freight charges. There is an impression here that prices are at or near bottom, this idea being strengthened by the prices obtained by the Baltimore & Ohio Railroad last week. Heavy steel scrap offered by that road sold as high as \$17.60, delivered at Massillon, Ohio, while rails sold up to \$17 and yard scrap at above \$14, Pittsburgh. It is figured that the latter must bring at least \$19 to let the buyer out with a profit. The Pennsylvania Railroad is taking bids until May 6 on 56,000 net tons of scrap.

We quote for delivery to consumers' mill in the Pittsburgh and other districts taking the Pittsburgh freight rate as follows:

Per Gross Ton	
Heavy melting steel.....	\$16.00 to \$16.50
No. 1 cast, cupola size.....	17.50 to 18.00
Rail for rolling, Newark and Cambridge, Ohio; Cumberland, Md.; Huntington, W. Va., and Franklin, Pa.	17.50 to 18.00
Compressed sheet steel.....	15.00 to 15.50
Bundled sheets, sides and ends..	14.00 to 14.50
Railroad knuckles and couplers..	19.00 to 19.50
Railroad coil and leaf springs...	19.00 to 19.50
Low phosphorus blooms and billet ends.....	21.50 to 22.00
Low phosphorus plate and other material.....	20.50 to 21.00
Railroad malleable.....	17.00 to 17.50
Steel car axles.....	19.50 to 20.00
Cast iron wheels.....	17.00 to 17.50
Rolled steel wheels.....	19.00 to 19.50
Machine shop turnings.....	12.00 to 12.50
Short shoveling turnings.....	12.00 to 12.50
Sheet bar crops.....	19.00 to 19.50
Heavy steel axle turnings.....	16.50 to 17.00
Short mixed borings and turnings	12.00 to 12.50
Heavy breakable cast.....	14.00 to 14.50
Stove plate.....	13.50 to 14.00
Cast iron borings.....	12.00 to 12.50
No. 1 railroad wrought.....	13.50 to 14.00
No. 2 railroad wrought.....	16.00 to 17.00

Youngstown Scrap Market

YOUNGSTOWN, May 5.—Owing to curtailment in active pig iron production and little or no prospect of enlarged steel making operations, the steel scrap market is quiet. Prices in consequence are weak and declines in both heavy melting and basic iron quotations have been on a parity, maintaining the usual differential. Prices down to \$16 on heavy melting are heard in this district, ranging up to \$16.50. While there is little current buying, some interest is being shown in forward commitments, over last half.

Youngstown Sheet and Tube Co. Awards Seamless Mill Contracts

Mill and auxiliary contracts for its new seamless tube mill have been awarded by the Youngstown Sheet & Tube Co. About one-third of the business was let to an American firm, and the remainder to two German builders. Deliveries are to be made in seven months, while from three to four months more will be required for installation. The unit will not be completed before March. It will employ about 300 persons. The contracts are as follows:

Der Deutschen Maschinenfabrik A.-G., Duisburg, Germany. Pilger mill 6 to 13 in. diam. and tributary equipment.

Gebr. Maer, M. Gladbach, Germany. Piercing mill and tributary equipment.

The Wellman-Seaver-Morgan Co., Cleveland. Sinking mills, ingot turning machines and hot saws.

The German makers to whom contracts were let underbid American firms competing for the work, while their larger experience in this type of construction also weighed in their favor. The company plans to install a large mill of this type in the Youngstown district and a smaller unit at the Indiana Harbor plant.

The larger-sized mill will produce seamless tubes from 6 in. to 13 in. in diameter, by piercing pipe lengths of steel blocks weighing several tons. To secure the quality of steel required for piercing, special equipment for bottom poured ingots will be installed. Heavier-type couplings will also be made from seamless tubing.

The location of the mill plant is still under consideration. A location at the Brier Hill works, as well as in connection with the East Youngstown plant, is being studied. The excess ingot capacity at the Brier Hill plant is a consideration in favor of that location. In the company's expansion program, one of the principal objectives, aside from further diversification in production, is to bring finishing capacity up to the rate of steel ingot output.

Philadelphia Foundrymen Will Take Trip by Airplanes

The 346th dinner and meeting of the Philadelphia Foundrymen's Association will be held Tuesday, May 12, at six o'clock, at the Manufacturers' Club. After the dinner, the members will take new Ford planes and enjoy a ride to the South Philadelphia plant of the Westinghouse Electric & Mfg. Co. at Essington. An excellent outside view of the buildings and surroundings will be obtained. After hitching to the special mooring mast, the foundrymen will descend into the pig iron yard and will be escorted through the great iron and brass foundry under one roof, 600 x 800 ft., with two of the largest casting pits in the world, having steel plate linings to keep out the water, each 64 x 20 ft. x 10 ft. One of the Westinghouse officials, with the aid of 100 slides, will explain the operations of the plant. The Westinghouse company has recently booked the order for the electric drive for the great plate mill of the Carnegie Steel Co. and is at work on a new Westinghouse-Baldwin electric locomotive.

Manganese Steel Film for New York Steel Treaters

A departure from the usual program will characterize the May meeting of the New York chapter of the American Society for Steel Treating. The Taylor-Wharton Iron & Steel Co., High Bridge, N. J., will present its program on the "History, Manufacture and Application of Manganese Steel," Wednesday evening, May 20, in the assembly room of the Merchants Association of New York, Woolworth Building. This is made up of a brief address by John Howe Hall, metallurgical engineer of the company, which is followed by slides and then a moving picture entitled "Putting the Right Steel on the Job." After this an informal discussion will take place which is expected to be a valuable feature of the evening.

Chicago

Demand for Heavier Steel Products Shows Improvement, but Market Not Very Active

CHICAGO, May 5.—Mills rolling the heavier finished products find both new business and specifications slightly heavier than a week ago, while inquiries are more numerous than at any time during April. The market is still essentially quiet, but producers have not abandoned hopes for a new buying movement. Consumption has been proceeding at a steady rate and inasmuch as relatively little business has been booked since early in the year, it is felt that users must soon dispose of the tonnage which they contracted for during the winter buying movement. This view is supported by the remarkable absence of requests for suspension of deliveries; in fact, the backlogs of the two leading local producers are still large enough to warrant operations at 90 to 95 per cent of ingot capacity. The number of active steel works blast furnaces in this district has been reduced to 28 out of a total of 35, a Youngstown stack at Indiana Harbor having been blown out. This loss is not significant, however, in view of the fact that the furnace was scheduled to go out for relining as soon as a new stack recently completed at Indiana Harbor got into full production.

In surveying current industrial activity the situation among automobile manufacturers is exceptionally encouraging. The five largest producers are turning out a total of 13,700 cars daily and the rest of the industry accounts for 2300 additional, making a total of 16,000. The tractor and farm implement makers have shown no recession in operations.

Prospective railroad car buying has not yet materialized in orders, but the St. Paul is confidently expected to close for 5500 cars this week. It is persistently rumored that both the Union Pacific and the Santa Fe will enter the market with large freight car programs. On the other hand, the Missouri, Kansas & Texas has indefinitely postponed action on its inquiry for 1800 cars owing to the discouraging agricultural outlook in the Southwest which has been suffering from a drought. Building prospects are more favorable with fully one-quarter of a million tons of Western work in sight. The leading fabricating award of the week was 3200 tons for a Northwestern University building, Chicago, which went to the Hansell-Elcock Co. The situation among fabricators is spotty with some of them badly in need of tonnage and a number of others still fortified with several months of work. Confusion as to prices is directly due to the pressure of Eastern competition. At Chicago, soft steel bars are well established at 2.10c. and plates and shapes at 2.20c., but at St. Louis, in the Southwest and in the Northwest, local producers are meeting the situation as they find it. Wire products remain weak and sheets have declined still further. Hot-rolled strip has receded to 2.40c., Chicago for wide strip and to 2.50c. on the narrower gages. No sales of billets are reported, but quotations are held at \$36, Chicago.

Pig Iron.—An Iroquois stack has been blown out and a Mayville furnace has been banked for a few days to permit imperative repairs. There are now five active merchant furnaces in this district, including two Iroquois, two Federal and the Zenith stack at Duluth. This number, however, will shortly be increased to six as soon as the Mayville furnace is able to resume. An Indiana agricultural implement maker has closed for 1000 tons of foundry for third quarter, part of it being placed with a local furnace. Another Indiana melter is inquiring for 500 tons of foundry. Most current inquiries are small, either indicating that users are reaching the end of their stocks or are rounding them out. A number of large melters are feeling out the market, but are holding back their purchases until they are satisfied that prices have reached bot-

tom. In fact, the increased interest manifested in the market is regarded as an encouraging indication. The reduction in blast furnace output has also relieved selling pressure somewhat. The heavy output of automobile makers is reflected in increased activity among Michigan melters. A Michigan user has closed for 1500 tons of 8 per cent silvery, and a current inquiry from the same State calls for 500 tons of silvery. An inquiry for 200 tons of low phosphorus is before the trade. No sales of Southern foundry are reported in this territory, but quotations of as low as \$18, base Birmingham, are said to have been made on Tennessee iron.

Quotations on Northern foundry, high phosphorus, malleable and basic irons are f.o.b. local furnaces and do not include an average switching charge of 61c. per ton. Other prices are for iron delivered at consumers' yards.

Northern No. 2 foundry, sil. 1.75 to 2.25	\$22.00
Northern No. 1 foundry, sil. 2.25 to 2.75	22.50
Malleable, not over 2.25 sil.	22.00
Basic	22.00
High phosphorus	22.00
High Superior charcoal, averaging sil. 1.50, delivered at Chicago	29.04
Southern No. 2, sil. 1.75 to 2.25 ..	24.51
Low phos., sil. 1 to 2 per cent, copper free	32.65
Silvery, sil. 8 per cent	31.29
Electric ferrosilicon, 14 to 16 per cent	\$44.00 to 45.00

Ferroalloys.—A sale of several hundred tons of spiegeleisen is reported. On tonnage business slight concessions below the appended prices have been made. Ferromanganese is unchanged at \$115, seaboard, although occasional carlots of resale have been sold at concessions.

We quote 80 per cent ferromanganese, \$122.56, delivered; 50 per cent ferrosilicon for 1925 delivery, \$85, delivered; spiegeleisen, 18 to 22 per cent, \$40.04 to \$40.58, delivered.

Plates.—A local mill has booked 1000 tons of steel against car orders placed by the Florida East Coast and the Illinois Traction Co. Meanwhile car orders in prospect call for 250,000 tons, the placing of which will have much to do with the future course of the steel market. Demand for oil storage tanks is more active. The Chicago Bridge & Iron Works has booked 1000 tons for tanks to be erected by the St. Louis South Western Railroad near Eldorado, Ark. The Magnolia Petroleum Co. has awarded 1200 tons of tankage for the same field. Local mills are meeting competition as they find it. In Chicago and vicinity the ruling market is 2.20c., Chicago.

The mill quotation is 2.20c., Chicago. Jobbers quote 3.10c. for plate out of stock.

Structural Material.—Western fabricating projects in prospect require an aggregate of 250,000 tons. All of this tonnage will not come up for consideration at once; in fact, current lettings, although numerous, do not bulk large. Bids on the municipal auditorium and orchestra hall, Minneapolis, exceeded the appropriation, but the matter will be again submitted to the city council this week and will come up for final decision May 12.

The mill quotation on plain material is 2.20c., Chicago. Jobbers quote 3.10c. for plain material out of warehouse.

Bars.—New business in soft steel bars shows some improvement and specifications likewise are more liberal. Farm implement and tractor manufacturers continue to take considerable tonnage, and the automobile industry is operating at a surprising rate. The output of cars is estimated at 16,000 daily, of which the Ford company is making 8100, the Chevrolet 2500, the Willys-Overland 1100, the Hudson-Essex 1000 and the Dodge 1000. A local mill rolling alloy steel bars is operating at capacity. Rail steel bar mills continue to book rather liberal orders from the implement industry. Demand for bar iron remains fair. The price situation is substantially unchanged.

Mill prices are: Mild steel bars, 2.10c. to 2.20c.; common bar iron, 2.10c., Chicago; rail steel, 2.10c., Chicago mill.

Jobbers quote 3c. for steel bars out of warehouse. The warehouse quotations on cold-rolled steel bars and shafting are 3.80c. for rounds and hexagons and 4.30c. for flats and squares; 4.15c. for hoops and 3.65c. for bands.

Jobbers quote hard and medium deformed steel bars at 2.60c.

Sheets.—The market is soft and prices are uncertain. Ruling quotations appear to range from 2.50c. to 2.60c., Chicago district mill, on blue annealed, 3.45c. to 3.60c. on black and 4.50c. to 4.60c. on galvanized. Notwithstanding the unsatisfactory condition of the market, a leading Western mill continues to operate full.

Chicago delivered prices from mill are 3.50c. to 3.65c. for No. 28 black, 2.55c. to 2.65c. for No. 10 blue annealed and 4.55c. to 4.65c. for No. 28 galvanized. Delivered prices at other Western points are equal to the freight from Gary plus the mill prices, which are 5c. per 100 lb. lower than the Chicago delivered prices.

Jobbers quote f.o.b. Chicago: 3.80c. base for blue annealed, 4.50c. base for black, and 5.50c. base for galvanized.

Wire Products.—Demand is spotty. Generally speaking, jobbers are reducing their stocks, but they are slow to order new supplies. Specifications from manufacturing users are fairly liberal, this being particularly true of the automobile industry. The price situation is substantially unchanged and mill operations range from 60 to 65 per cent. For mill prices see page 1378.

We quote warehouse prices f.o.b. Chicago: No. 8 black annealed wire, \$3.05 for 100 lb.; common wire nails, \$3.15 per keg; cement coated nails, \$2.45.

Warehouse Prices.—Local jobbers have reduced common wire nails and cement coated nails \$2 a ton. Warehouse business in April was slightly heavier than in March.

Rails and Track Supplies.—Specifications against rail contracts are liberal and releases against track fastening commitments are described as very good. Recent orders booked by a local mill aggregate 1850 tons of standard section rails, 1200 tons of tie plates, 500 tons of special rail joints and 320 tons of angle bars.

Standard Bessemer and open-hearth rails, \$43; light rails, rolled from billets, 1.80c. to 1.90c., f.o.b. makers' mill.

Standard railroad spikes, 3c. mill; track bolts with square nuts, 4c. mill; steel tie plates, 2.35c., f.o.b. mill; angle bars, 2.75c. f.o.b. mill.

Jobbers quote standard spikes out of warehouse at 3.55c. base, and track bolts, 4.55c. base.

Bolts, Nuts and Rivets.—The automobile industry is still placing liberal orders and specifications continue to come from implement makers. Otherwise, the bolt and nut market is quiet with prices unsteady, but substantially unchanged. Small rivets are weak and 70 and 10 off, Chicago, is the top of the market.

Jobbers quote structural rivets, 3.50c.; boiler rivets, 3.70c.; machine bolts up to $\frac{3}{4}$ x 4 in., 55 per cent off; larger sizes, 55 off; carriage bolts up to $\frac{3}{4}$ x 4 in., 50 off; larger sizes, 50 off; hot-pressed nuts, squares, tapped or blank, \$3.50 off; hot-pressed nuts, hexagons, tapped or blank, \$4 off; coach or lag screws, 60 per cent off.

Cast Iron Pipe.—This commodity is showing rather surprising reserve strength following the sharp concessions at Detroit, where foreign competition was encountered. James B. Clow & Sons were awarded 1263 tons for Chicago at a price figuring back to \$39.70, base, Birmingham. The Alabama Pipe Co. is low on 150 tons for Toledo, Ohio. Milwaukee has awarded 500 tons to Lynchburg Foundry Co. and 2000 tons to the United States Cast Iron Pipe & Foundry Co. The latter maker will furnish 350 tons for Iron Mountain, Mich. The National Cast Iron Pipe Co. will supply 300 tons for Franklin County, Ohio, and 550 tons for Allouez, Wis. Pending work includes:

Hammond, Ind., 677 tons of 24-in. and 216 tons of 30-in., bids to be in May 6.

Chicago, 52 tons of $\frac{3}{4}$ -in. and 100 tons of fittings, May 12.

Ferndale, Mich., 1000 tons of 6-, 8- and 12-in., May 4.

Sturgeon Bay, Wis., 100 tons of 4-, 6- and 8-in., May 5.

Watertown, Wis., 100 tons, 4 to 6-in., May 18.

Franklin County, Ohio, 200 tons, 6- and 8-in., May 9.

We quote per net ton, f.o.b. Chicago, as follows: Water pipe, 4-in., \$50.70 to \$52.26; 6-in. and over, \$46.70 to \$48.20; Class A and gas pipe, \$4 extra.

Reinforcing Bars.—The steel for the Stevens Hotel, 1600 tons, and Section 2, South Water Street double decking, 700 tons, both local projects, have not yet been placed. Although there is considerable hesitancy among buyers, owing to the weakness of mill prices, there is nevertheless a growing feeling that the market will not undergo a sharp decline. In fact, 2.70c., Chicago warehouse, is still being obtained on small ton-

nages of billet steel reinforcing bars, notwithstanding the fact that 2.60c. is being done on attractive work.

Lettings include:

South Shore Country Club Apartments, Chicago, 440 tons, to Joseph T. Ryers & Son.

Stony Island Building Co., apartments and stores, Sixty-Seventh Street and Stony Island Avenue, Chicago, 270 tons, to Concrete Steel Co.

High school, Eau Claire, Wis., 450 tons, to Kalman Steel Co.

Chemical house, Water Department, Minneapolis, 750 tons awarded to Kalman Steel Co. instead of Clinton Bridge Co., as reported last week.

Pending work includes:

University of Chicago, hospital and laboratory buildings, Chicago, 1400 tons, general contract awarded to Wm. Adams Co.

Ward Memorial Building, Northwestern University, Chicago, 265 tons, general contract awarded to R. C. Wieboldt Co. Apartment, Arlington Avenue and Clark Street, Chicago, 300 tons.

Chicago Board of Education, school buildings at One Hundred and Fifteenth Street and Stewart Avenue, and on Lamoin Avenue, 125 tons each, general contract bids to be taken May 5.

Old Material.—An independent mill has bought several thousand tons of heavy melting at \$15.25 delivered. Generally speaking, the market is in a stalemate with consumer interest low and selling pressure on the part of dealers at a minimum. Prices show little change, but the weakness of heavy melting at Pittsburgh, where \$16.50 delivered is said to be the maximum going price on heavy melting, has caused local observers to look for further recessions in the Chicago market. Low phosphorus scrap appears to be scarce, as consumer purchases of two months ago are not yet filled and prices on those grades have remained stationary. Railroad offerings include the St. Paul, 1200 tons; the Pennsylvania, 57,000 tons; the New York Central, 12,000 tons; the Erie, a blank list.

We quote delivery in consumers' yards, Chicago and vicinity, all freight and transfer charges paid, as follows:

Per Gross Ton	
Iron rails	\$16.00 to \$16.50
Cast iron car wheels	16.00 to 16.50
Relaying rails, 56 and 60 lb.	25.00 to 26.00
Relaying rails, 65 lb. and heavier	28.00 to 31.00
Forged steel car wheels	18.00 to 18.50
Railroad tires, charging box size	18.00 to 18.50
Railroad leaf springs, cut apart	18.00 to 18.50
Rails for rolling	16.00 to 16.50
Steel rails, less than 3 ft.	17.50 to 18.00
Heavy melting steel	14.75 to 15.25
Frogs, switches and guards cut apart	15.00 to 15.50
Shoveling steel	14.50 to 15.00
Drop forge flashings	11.00 to 11.50
Hydraulic compressed sheets	12.50 to 13.00
Axle turnings	13.00 to 13.50
Steel angle bars	16.50 to 17.00
Steel knuckles and couplers	17.50 to 18.00
Coil springs	19.00 to 19.50
Low phosph. punchings	16.00 to 16.50
Machine shop turnings	8.50 to 9.00
Cast borings	10.00 to 10.50
Short shoveling turnings	10.00 to 10.50
Railroad malleable	17.50 to 18.00
Agricultural malleable	16.50 to 17.00

Per Net Ton	
Iron angle and splice bars	16.00 to 16.50
Iron arch bars and transoms	18.00 to 18.50
Iron car axles	25.50 to 26.00
Steel car axles	16.00 to 16.50
No. 1 busheling	10.50 to 11.00
No. 3 busheling	8.50 to 9.00
Pipes and flues	9.50 to 10.00
No. 1 railroad wrought	13.00 to 13.50
No. 2 railroad wrought	13.00 to 13.50
No. 1 machinery cast	14.50 to 17.00
No. 1 railroad cast	15.50 to 16.00
No. 1 agricultural cast	15.00 to 15.50
Locomotive tires, smooth	16.00 to 16.50
Stove plate	13.25 to 13.75
Grate bars	13.00 to 13.50
Brake shoes	13.00 to 13.50

William Wuthenow, manager Western plants Republic Iron & Steel Co., with headquarters at Chicago, has been elected president of a new company which will operate the former Republic bar iron mill at East Chicago, Ind., recently purchased by Briggs & Turivas, Inc., Chicago. The name of the new company has not yet been definitely decided. Mr. Wuthenow has been actively identified with the iron and steel industry for 40 years, the last 25 years with the Republic company. J. G. Bladholm, who has been assistant to Mr. Wuthenow in the Republic organization, has been appointed superintendent of the East Chicago mill.

New York

Strong Competition Brings Low Prices on Pig Iron

NEW YORK, May 5.—Furnaces in the Buffalo and eastern Pennsylvania districts engaged in a lively battle for business last week and it is estimated that from 12,000 to 15,000 tons was sold, largely for delivery in New England. The price recessions of the preceding week were followed by still lower prices. The Buffalo market descended to a base of \$19 for either No. 2 plain or No. 2X, and for No. 2X a differential of 50c. was usually obtained. Some buyers claimed to have purchased for even less than \$19, base, but \$19 now seems to be the lowest price obtainable. Eastern Pennsylvania furnaces met the competition by receding to nearly \$20, if indeed that point was not reached, but the present market is more nearly represented by a quotation of \$20.25 to \$20.50, and on small lots \$21 is quoted. Some sellers insist that the bottom has been reached, but the situation is unsettled. Sales include 2000 tons to the General Fire Extinguisher Co., and 3000 tons to the Richardson-Boynton Co., both for third quarter. The H. B. Smith Co., Westfield, Mass., is in the market for 4000 to 5000 tons. Some iron is still being brought from India, largely for customers who wish to have it in their mixtures, but the movement is light and from other foreign lands also very little iron is coming.

We quote delivered in the New York district as follows, having added to furnace prices \$2.52 freight from eastern Pennsylvania, \$4.91 from Buffalo and \$5.44 from Virginia:

East. Pa. No. 2, sil. 1.75 to 2.25	\$22.77 to \$23.02
East. Pa. No. 1X fdy., sil. 2.75 to 3.25	23.02 to 23.52
East. Pa. No. 2X fdy., sil. 2.25 to 2.75	22.77 to 23.02
Buffalo, sil. 1.75 to 2.25	23.91 to 24.91
No. 2 Virginia, sil. 1.75 to 2.25	28.44

Ferroalloys.—One lot of 100 tons and several small and carload lots make up the sales of ferromanganese in the last week, all for prompt shipment. There have been sales of a few carloads of spiegeleisen, also for early delivery. Prices for both alloys continue unchanged and firm. Contracting for the last half is expected to develop in the near future. Specifications on existing contracts continue uninterrupted.

Cast Iron Pipe.—General unsteadiness of prices is still the outstanding feature of the pressure pipe market. A satisfactory volume of inquiry is reported developing among municipalities and several sizable tonnages are expected to be offered for bids in a few weeks. The City of White Plains, N. Y., has awarded 2900 tons of pipe to the Warren Foundry & Pipe Co. The Pont-a-Mousson works has been an active factor in the market and recently received 400 tons from the Stamford Gas & Electric Co., Stamford, Conn., and about 1400 tons from a Staten Island gas company. In California about 3600 tons of pipe for the City of Vernon was awarded to the French company. Current sales have tended to establish prices on a lower basis and warrant quotations of \$1 a ton less than the recent schedule. Soil pipe continues weak with concessions of 2 points or more per ton by makers seeking business. Announcement of slightly lower prices is expected before long.

We quote pressure pipe per net ton, f.o.b. New York, in carload lots, as follows: 6-in. and larger, \$51.60 to \$52.60; 4-in. and 5-in., \$56.60 to \$57.60; 3-in., \$66.60 to \$67.60, with \$5 additional for Class A and gas pipe. Discounts of both Northern and Southern makers of soil pipe, f.o.b. New York are as follows: 6-in., 42½ to 43¼ per cent off list; heavy, 52½ to 53¼ per cent off list.

Warehouse Business.—Prices on black sheets have been reduced 25c. per 100 lb. to \$4.35 to \$4.50, base, and galvanized sheets by the same reduction are quoted at \$5.35 to \$5.50 per 100 lb. for No. 28, being based on \$4.30, Pittsburgh mill. This followed several weeks of broad price cutting. Demand is slack, excepting in structural steel. Despite this, two interests find that April business in dollars was about the same as March. Export billings for shipment from stock are in fair

volume. See page 1402 for prices. We quote boiler tubes per 100 ft. as follows:

Lapwelded steel tubes, 2-in., \$17.33; seamless steel, 2-in., \$20.24; charcoal iron, 2-in., \$25; 4-in., \$67.

Finished Material.—A dull week in purchases but a large enough tonnage including specifications on contracts to keep bookings entered against mills having several products up to 70 per cent of operating capacity, and operations at little if any above 70 per cent, describe the present situation. Some steel is in demand, but the buyer is making every effort to find lower than prevailing prices. In spite of the close balance of orders and production, the withholding of specifications appears to be resulting in a further price weakness. Transactions were learned of that included black sheets at a basis of 3.20c., Pittsburgh, plates at 1.90c. and even some lots of bars and shapes at 1.90c., but orders were also obtained at higher prices and at this writing buyers had not secured revisions on contracts. Plates, however, are quotable at 1.90c. on large lots.

We quote for mill shipments, New York delivery, as follows: Soft steel bars, 2.34c. to 2.44c.; plates, 2.24c. to 2.34c.; structural shapes, 2.34c.

Coke.—Drastic reduction of operations has added several hundred ovens to the idle list. But furnace schedules also were reduced, so the net result may be little different. Output is estimated at less than 60 per cent of capacity, yet there are accumulations of furnace grade which go at \$3 to \$3.25. Demand for foundry coke is more active and good grades are bringing \$4 to \$4.50. One operator expressed the opinion that curtailment of output will continue until demand becomes sufficiently strong to brace prices. By-product coke is unchanged at \$10.41, Newark or Jersey City.

Old Material.—Quotations are generally unchanged in a quiet market. Activity is still confined to the few eastern Pennsylvania consumers that have provided the bulk of the business for the past month or more. No. 1 heavy melting steel is still being bought by brokers at \$14.50 per ton, delivered eastern Pennsylvania consumers. Machine shop turnings are being purchased at \$12 per ton delivered to Phoenixville and to a Harrisburg consumer. The Phoenixville consumer is also taking bundled sheets and stove plate. It is rather generally doubted by dealers and brokers that German agents in the United States will be able to purchase heavy melting steel for export to Germany at prices sufficiently low to be profitable.

Buying prices per gross ton New York follow:

Heavy melting steel, yard	\$10.00 to \$10.50
Heavy melting steel, railroad or equivalent	11.00 to 11.75
Rails for rolling	12.75 to 13.25
Relaying rails, nominal	24.00 to 25.00
Steel car axles	17.50 to 18.00
Iron car axles	23.00 to 23.50
No. 1 railroad wrought	13.00 to 13.50
Forged fire	10.00
No. 1 yard wrought, long	12.50 to 13.00
Cast borings (steel mill)	8.50 to 9.00
Cast borings (chemical)	14.00 to 14.50
Machine shop turnings	8.00 to 8.50
Mixed borings and turnings	8.00 to 9.00
Iron and steel pipe (1 in. diam., not under 2 ft. long)	10.25 to 10.75
Stove plate	9.00 to 11.00
Locomotive grate bars	11.50 to 12.00
Malleable cast (railroad)	13.00 to 13.50
Cast iron car wheels	13.00 to 13.50
No. 1 heavy breakable cast	11.50 to 12.00

Prices which dealers in New York and Brooklyn are quoting to local foundries per gross ton follow:

No. 1 machinery cast	\$15.00 to \$15.50
No. 1 heavy cast (columns, building material, etc.), cupola size	13.00 to 13.50
No. 2 cast (radiators, cast boilers, etc.)	12.00 to 12.50

In connection with the April meeting of the Lehigh Valley Purchasing Agents' Association, held on April 27 at Allentown, Pa., a trip of inspection was made through the plant of the Treadwell Engineering Co., Easton. Following the plant visitation, the members of the organization were guests of the Treadwell company at a dinner at the Northampton Country Club. W. L. Chandler, secretary of the National Association of Purchasing Agents, was the chief speaker of the occasion.

Cincinnati

Prices of Silvery Pig Iron Reduced \$1— Fair Inquiry Pending

CINCINNATI, May 5.—An inquiry from the Hooven-Owens Rentschler Co., Hamilton, Ohio, for 4800 tons of Northern foundry iron for third and fourth quarter delivery is the outstanding feature of the local market. Sales are limited mostly to small tonnages, but inquiries for the third quarter have increased. The furnace of the Norton Iron Works, Ashland, Ky., will be blown out on May 6. Furnaces in Jackson and Ironton territory have large tonnages piled in their yards. Prices of Northern and silvery irons are still trending downward, the latter being from \$1 to \$1.50 under the schedule announced two weeks ago. Sales of Northern iron include 400 tons of foundry iron to Fort Wayne, Ind.; 500 tons of foundry to an Indiana melter; 500 tons of high silicon iron to a southern Ohio consumer; 150 tons of foundry to a Newark, Ohio, melter; 150 tons of malleable to northern Ohio consumer; 100 tons of foundry to a Galion, Ohio, foundry; 150 tons of silvery to a southern Ohio interest, and 100 tons of silvery to a central Indiana consumer. Tennessee iron remains at \$18.50, Birmingham, a local dealer having sold 150 tons during the past week at this price. The Hamilton Foundry & Machine Co., Hamilton, Ohio, is in the market for 1800 tons of Northern foundry. Other inquiries consist of 500 tons of Northern foundry wanted by a St. Louis melter; 250 tons of Southern for the Peerless Mfg. Co., Louisville, Ky.; 350 tons of Northern foundry and 150 tons of the same grade by two eastern Ohio consumers; 100 tons of Northern malleable for the Henry Vogt Co., Louisville, Ky.; 100 tons of Northern foundry and 50 tons of charcoal iron for an eastern Ohio melter; 100 tons of silvery for central Indiana; 100 tons of Southern for the Star Foundry, Evansville, Ind.; and 100 tons of Southern for a Nashville, Tenn., consumer. Little Alabama iron is being sold. Several carload lots have been disposed of at \$21, Birmingham.

Based on freight rates of \$4.05 from Birmingham and \$2.27 from Ironton we quote f.o.b. Cincinnati:

Alabama fdy., sil. 1.75 to 2.25	
(base)	\$24.05 to \$25.05
Alabama fdy., sil. 2.25 to 2.75 ..	24.55 to 25.55
Tennessee fdy., sil. 1.75 to 2.25 ..	22.55
Southern Ohio silvery, 8 per cent	28.77
Southern Ohio fdy., sil. 1.75 to 2.25 ..	22.77
Southern Ohio, basic (nominal) ..	22.27
Southern Ohio malleable	22.27

Structural Steel.—Awards have been limited during the past week. The largest one is that of the Louisville & Nashville Railroad for a bridge at Knoxville, Tenn., to the American Bridge Co., 1200 tons. Another sizable award was that of the Indiana State Highway Commission to the Vincennes Bridge Co. for a highway bridge, totaling 500 tons, at Rogers, Ind. Pending business includes the Third National Bank, Dayton, Ohio, 1500 tons, for which bids are now in. Prices remain around the 2.10c., Pittsburgh, level, although lower figures have been quoted.

Reinforcing Bars.—The Bourne-Fuller Co. was awarded the contract for the warehouse of the Kroger Grocery & Baking Co., Cincinnati, 450 tons, and the West Virginia Rail Co., the new grain elevator of the Early & Daniel Co., Cincinnati, 385 tons. The College Hill School, totaling 100 tons, was awarded to the Bourne-Fuller Co. Pending projects are not numerous. The American Products Co., Cincinnati, is to erect a building that will require about 250 tons. The Third National Bank, Dayton, Ohio, is a pending job, about 225 tons. Prices are weaker, with new billet steel bars at 2c. to 2.10c., mill. Rail steel is selling at 1.90c., mill.

Wire Goods.—Mills in Portsmouth and Ironton territory state that they are producing nails and wire at or near capacity. Sales have fallen off to some extent in the last few weeks, but sellers believe that consumers will again be in the market shortly. The price

on nails continues to be 2.75c., mill, with plain wire moving at 2.50c., mill.

Bars, Shapes and Plates.—Consumers have placed only a limited tonnage the past week. Inquiries have been slow, but sellers feel that the tone of the local market is better. Present prices vary from 2c. to 2.10c., Pittsburgh, with considerable portion of the business going at the lower figure.

Sheets.—Business continues to be highly competitive, with mills offering concessions in order to make sales. Producers in Cincinnati territory are operating at a fairly high rate. The Wheeling Steel Corporation has 17 of its 23 sheet mills at Portsmouth, Ohio, in operation, while the Ashland, Ky., plant of the American Rolling Mill Co., is running on a satisfactory basis. Other plants of this company, located at Middletown and Zanesville, Ohio, are reported to be operating at or near capacity. The Newport Rolling Mill Co. is producing sheets at a normal rate, according to company executives. Orders still are coming in for immediate business, and little is being done by consumers to anticipate future requirements. Black sheets are in fair demand, but the intense competition between sellers has brought down quotations. Prices now prevailing locally are 3.30c. to 3.35c., Pittsburgh. Galvanized sheets are also being sold at these figures. Blue annealed sheets can be obtained for 2.40c. to 2.45c., Pittsburgh. Demand for auto sheets is slightly better. Several automobile manufacturers, including the Ford Motor Co., Detroit, are buying sheets from mills in this territory. Prices range from 4.40c. to 4.45c., Pittsburgh.

Tin Plate.—Although books have been open for the third quarter for several weeks, only scattering orders are being received. Most of the present buying consists of fill-in orders.

Warehouse Business.—Dealers report that sales during April showed a slight increase over the previous month. However, April is normally one of the biggest months of the year in volume of business, and most jobbers are disappointed that the improvement over March was not greater. In some cases March and April were about on a par. The volume of orders has held up well, but the tonnage has been light. Consumers are holding fast to the policy of buying only what is absolutely necessary. The only bright spot is the fact that the first four months of 1925 reveal an increase in sales as compared with the same period last year. May has opened up quietly, with inquiries spotty and material moving slowly.

Cincinnati jobbers quote: Iron and steel bars, 3.30c.; reinforcing bars, 3.30c.; hoops, 4.35c.; bands, 3.95c.; shapes, 3.40c.; plates, 3.40c.; cold-rolled squares, 4.55c.; open-hearth spring steel, 4.75c. to 5.75c.; No. 10 blue annealed sheets, 3.90c.; No. 28 black sheets, 4.60c.; No. 28 galvanized sheets, 5.75c.; No. 9 annealed wire, \$3.25 per 100 lb.; common wire nails, \$3.25 per keg base; cement coated nails, \$2.65 per keg; chain, \$7.55 per 100 lb. base; large round head rivets, \$3.75 base; small rivets, 65 per cent off list. Boiler tubes, prices net per 100 ft., lap welded steel tubes, 2-in., \$19; 4-in., \$39; seamless, 2-in., \$19; 4-in., \$39.

Pipe.—The Union Gas & Electric Co., Cincinnati, is inquiring for 900 tons of 16-in. gas pipe to be installed at Dayton, Ohio. Sellers state that the demand for pipe has been fair during the past month.

Coke.—Weakness is evident in the coke market. Sales have been scattered and inquiries are not encouraging. Producers in this territory are operating at about 80 per cent of capacity. Prices on by-product foundry coke are being shaded in order to obtain business. Shipments on contracts are fair. Furnace coke has weakened in the last ten days.

Connellsville furnace, \$3 to \$3.50; foundry, \$4.50 to \$5.50; New River foundry, \$8.00 to \$8.50; Wise County furnace, \$3.75 to \$4.50; foundry, \$4.00 to \$6.00; by-product foundry, \$6.50 Connellsville basis.

Old Material.—Unusual quietness prevails in the local scrap market. Some mills have resumed the taking of shipments on contract, but they are not in the market for more material. They probably would purchase at a low enough price, but dealers are holding their stock rather than disposing of it at a loss. The Cleveland, Cincinnati, Chicago & St. Louis Railroad has a small list closing this week, while the Pennsylvania

has a larger list which closes within a few days. Quotations are largely nominal, due to absence of sales.

We quote dealers' buying prices, f.o.b. cars, Cincinnati:

Per Gross Ton	
Heavy melting steel.....	\$13.00 to \$13.50
Scrap rails for melting.....	13.50 to 14.00
Short rails.....	17.50 to 18.00
Relaying rails.....	28.00 to 28.50
Rails for rolling.....	15.00 to 15.50
Old car wheels.....	13.50 to 14.00
No. 1 locomotive tires.....	16.50 to 17.00
Railroad malleable.....	16.00 to 16.50
Agricultural malleable.....	14.50 to 15.00
Loose sheet clippings.....	9.50 to 10.00
Champion bundled sheets.....	12.00 to 12.50
Per Net Ton	
Cast iron borings.....	8.50 to 9.00
Machine shop turnings.....	7.50 to 8.00
No. 1 machinery cast.....	17.50 to 18.00
No. 1 railroad cast.....	15.00 to 15.50
Iron axles.....	22.00 to 22.50
No. 1 railroad wrought.....	11.00 to 11.50
Pipes and flues.....	7.50 to 8.50
No. 1 busheling.....	9.50 to 10.00
Mixed busheling.....	8.50 to 9.00
Burnt cast.....	9.50 to 10.00
Stove plate.....	10.00 to 10.50
Brake shoes.....	11.00 to 11.50

Buffalo

Low Prices on Pig Iron—Price of Heavy Melting Steel Advanced

BUFFALO, May 5.—Furnaces have taken very little business. During the past week the inquiry aggregated 5000 to 6000 tons. New England contributed a 2000-ton inquiry for foundry and a 1000-ton inquiry. The Otis Elevator Co. is said to have been in the market for a couple of thousand tons. Some sellers still quote \$20 base though \$19 is being quoted on both No. 2 plain and No. 2X, and reports of Buffalo iron going at still lower prices are current. One Buffalo furnace has had an \$18.50 price submitted to it and given the opportunity of meeting it, but declined. In the main, sellers realize that even selling at \$20 a ton represents a substantial loss for them. One lot of 100 tons sold by a local furnace brought \$21; it was 3.25 silicon foundry. It is reported that Port Henry iron is underselling Buffalo iron in the East. Furnace operations remain as before, 13.

We quote prices f.o.b. gross ton, Buffalo, as follows:

No. 2 plain, sil. 1.75 to 2.25.....	\$19.00 to \$20.00
No. 2X foundry, sil. 2.25 to 2.75.....	19.00 to 20.00
No. 1 foundry, sil. 2.75 to 3.25.....	19.50 to 20.50
Malleable, sil. up to 2.25.....	19.00 to 20.00
Basic.....	19.50 to 20.00
Lake Superior charcoal.....	29.28

Finished Iron and Steel.—The current inquiry for rolled products is about the same as it has been with no further softening reported in the prices; the tendency in fact seems to be to harden, particularly in carload lots on carbon steel bars, angles, channels and beams. On small tonnages 2,365c., Buffalo, is being obtained and 2,265c. on the larger lots. Sheet inquiry is just fair and the prices show no sign of further weakening. Operations are running about 70 per cent. Spring construction has not come along in volume and fabricators report a scarcity of sizable contracts.

Warehouse prices are being quoted as follows: Steel bars, 3.25c.; steel shapes, 3.35c.; steel plates, 3.35c.; No. 10 blue annealed sheets, 4.05c.; No. 28 black sheets, 4.75c.; No. 28 galvanized, 5.80c.; cold rolled shapes, 4.65c.; cold rolled rounds, 4.20c.; wire nails, 4.00c.; black wire, 4.05c.

Old Material.—A little buying is going on and it has had the effect of hardening the heavy melting steel price somewhat. It is reported that one large mill is about ready to come into the market for a tonnage. Other mills are buying in smaller quantities and \$16 to \$16.50 has been paid for heavy melting steel. Dealers say there have been no sales under \$16 even for ordinary heavy melting, which is somewhat inferior to strictly No. 1. One mill will pay occasionally \$16.50 and \$16 freely. Mills have no great supplies of material on hand and a little buying would send the market up. Specialties are trailing with only an occasional carload sold; steel casting plants are not very busy. More stove plate has been sold at \$14.50. Cast scrap is going begging as gray iron foundry operation is not

high. Some sales of borings and turnings are going on for Cleveland, Scottsville and Breckenridge delivery on old orders. The price is \$12.50 Cleveland and \$13.25 Scottsville and Breckenridge.

We quote prices f.o.b. gross ton, Buffalo, as follows:

Heavy melting steel.....	\$16.00 to \$16.50
Low phosphorus.....	18.50 to 19.50
No. 1 railroad wrought.....	14.00 to 14.50
Car wheels.....	15.00 to 16.00
Machine shop turnings.....	10.00 to 10.50
Cast iron borings.....	10.00 to 10.50
No. 1 busheling.....	15.50 to 16.00
Stove plate.....	14.00 to 14.50
Grate bars.....	12.50 to 13.00
Bundled sheets.....	11.50 to 12.00
Hydraulic compressed.....	14.50 to 15.50
No. 1 machinery cast.....	16.50 to 17.00
Railroad malleable.....	17.00 to 17.50
No. 1 cast scrap.....	16.50 to 17.00
Iron axles.....	26.00 to 27.00
Steel axles.....	17.00 to 17.50

San Francisco

General Conditions Remain Quiet—Prices Unchanged—New Business Lags

SAN FRANCISCO, May 2 (*By Air Mail*).—The absence of fresh inquiries for large tonnages continues as the most conspicuous aspect at present in the Pacific Coast iron and steel market. Prices are soft but unchanged from the quotations of a week ago, primarily because there has been no business of a size to test prevailing figures. Lettings during the week in shapes and plates were small, although bids have closed on several fairly good sized jobs.

An application has been filed by the county and city of Los Angeles, the city of Long Beach, the Harbor Commissioners of the city of Los Angeles and the Los Angeles & Salt Lake Railroad Co. for authority to construct a viaduct over Dominguez Creek on the Anaheim road, in the Los Angeles harbor district, and also for the approval of an agreement between the applicants for the division of the cost of the proposed viaduct, approximately \$600,000.

Pig Iron.—Bids have closed, but no award has as yet been made by the Southern Pacific Co. for 600 tons of foundry iron. Sales during the past week were all confined to small and scattered lots. Prices are unchanged, and no new inquiries of any size have developed. No new offers in Chinese basic are known to have been made since that reported a week ago.

Utah basic.....	\$27.25 to \$28.25
Utah foundry, sil. 1.75 to 2.25.....	27.50 to 28.50
Scotch foundry.....	28.00 to 30.00
English foundry.....	27.00 to 28.00
Belgian foundry.....	26.00 to 27.00
Dutch foundry.....	25.25 to 26.50
Indian foundry.....	26.00 to 27.00
Birmingham, Ala., foundry, sil. 2.75 to 3.25.....	31.00 to 32.00

*Delivered San Francisco.

**Duty paid, f.o.b. cars San Francisco.

Shapes.—Contracts closed during the past week called for only 770 tons, although bids are in on several fair sized jobs. McClintic-Marshall Co. took 500 tons for the Pacific Telephone & Telegraph Co. building at San Diego, the California Steel Co. took 170 tons for a department store in Oakland and the Herrick Iron Works was awarded 100 tons for a Pacific Gas & Electric Co. warehouse in Emeryville. Prices are unchanged 2.50c. to 2.55c., c.i.f., being the prevailing quotations for material delivered here. Large foreign material is quoted at 2.20c., c.i.f., duty paid, here, but no sales of any size are known to have been made. No fresh inquiries have developed.

Plates.—The only award of more than 100 tons made during the past week was taken by the Western Pipe & Steel Co. for one 55,000-bbl. tank for the Associated Oil Co. at Tacoma, Wash., 200 tons. The only new inquiry was for 200 tons for spillway gates for the Merced Irrigation District. Bids will be called about June 2. Prices are holding at 2.50c., c.i.f., here. If 2.45c., c.i.f., is possible it has yet to be tested by a desirable tonnage. Bids close May 6 for 6000 tons for the Vancouver, B. C., pipe line.

Bars.—More activity has developed in reinforcing

bars which are steady at 3.35c., base, carload, here, and 3.80c., base, l.c.l., here. Soft steel bars are unchanged here at 2.55c. to 2.60c., base, and soft steel bands are being quoted here at 3.30c. to 3.35c., base. Bids are in on several good sized reinforcing jobs, and a small number of new jobs have recently come up for figures. Among the lettings of the past week were the following:

McAdam Apartment House, Sacramento and Mason Streets, San Francisco, Cal., 800 tons, to Gunn, Carle & Co.

Alvarado School, San Francisco, Cal., 172 tons, to Truscon Steel Co.

Pacific Gas & Electric Co. buildings at Emeryville, Cal., 100 tons, to Steel Service Co.

Manuel Lewis Apartment House, Sacramento, Cal., 135 tons, to Truscon Steel Co.

Sunset Theater, Grand Avenue, Oakland, Cal., 100 tons, to two unnamed local jobbers.

Nicholas Causeway Bridge, Chandler, Cal., 300 tons, to Truscon Steel Co.

Steel Pipe.—The city of Elsinore, Cal., has awarded 743 tons of wrought black steel pipe to the Claude Fisher Co., Los Angeles, and the city of Los Angeles has awarded 500 tons of 7 to 10-in. standard steel pipe to the Associated Supply Co. and 110 tons of standard galvanized wrought steel pipe to the Thomas Haverty Co.

Warehouse Business.—Several of the local jobbers believe there are indications of better buying on the part of the retail trade, which is reflecting itself in a stronger demand for sheets and plates out of stock. There are, however, no large orders being placed at present. Prices are substantially unchanged.

Merchant bars, \$3.30 base, per 100 lb.; merchant bars, $\frac{3}{4}$ in. and under, rounds, squares and flats, \$3.80 base, per 100 lb.; soft steel bands, \$4.15 base, per 100 lb.; angles, $\frac{3}{4}$ in. and larger x $1\frac{1}{4}$ in. to 2 $\frac{1}{2}$ in., inc., \$3.30 base, per 100 lb.; channels and tees, $\frac{3}{4}$ in. to 2 $\frac{1}{2}$ in., inc., \$3.90 base, per 100 lb.; angles, beams and channels, 3 in. and larger, \$3.15 base, per 100 lb.; tees, 3 in. and larger, \$3.30 base, per 100 lb.; universal mill plates, $\frac{3}{4}$ in. and heavier, stock lengths, \$3.30 base, per 100 lb.; spring steel, $\frac{3}{4}$ in. and thicker, \$6.30 base, per 100 lb.; wire nails, \$4 base, per 100 lb.; No. 10, blue annealed sheets, \$4.20 per 100 lb.; No. 28, galvanized sheets, \$6.25 per 100 lb.; No. 28, black sheets, \$5.25 per 100 lb.

Sheets.—Local interest is comparatively small. Somewhat better inquiries are reported in the South, but no large business has been closed recently with the exception of 972 tons of blue annealed sheets for the Vista Irrigation District, San Diego County, for a pipe line, which was taken by the Baker Iron Works. Prevailing quotations here are: Blue annealed sheets, 3.41c., c.i.f., based on 2.60c., Pittsburgh; black sheets, 4.21c., c.i.f., here, based on 3.40c., Pittsburgh, and galvanized sheets, 5.23c., c.i.f., here, based on 4.50c., Pittsburgh.

Coke.—A Los Angeles foundry placed an order with a local importer for 1000 tons during the past week, and bids have closed, but no award yet made, for the 600 tons inquired for recently by the Southern Pacific Co. Most recent sales have been relatively small. Prices are the same as those quoted a week ago.

English beehive, \$15 to \$17 at incoming dock, and English by-product, \$12.50 to \$14.00; Birmingham, Ala., by-product, \$19.50 to \$20.50 delivered; Wise County, Va., beehive, \$22 delivered.

Detroit Scrap Market

DETROIT, May 5.—While the production of waste material in the district is at peak for the year, it is finding an outlet through dealers and mills on standing orders and a very small tonnage is being stored. Automotive production schedules for the month are heavy, with a general situation of production being slightly behind sales.

The following prices are quoted on a gross ton basis f.o.b. producers' yards, excepting stove plate, No. 1 machinery cast and automobile cast, which are quoted on a net ton basis:

Heavy melting and shoveling steel	\$13.00 to \$14.00
Borings and short turnings	10.00 to 10.50
Long turnings	9.75 to 10.25
No. 1 machinery cast	15.00 to 16.00
Automobile cast	20.00 to 21.00
Hydraulic compressed	11.25 to 11.75
Stove plate	14.50 to 15.50
No. 1 busheling	11.00 to 12.00
Sheet clippings	8.50 to 9.25
Flashings	10.00 to 11.00

St. Louis

Survey of Foundries Shows Most of Them Well Covered on Pig Iron Needs

ST. LOUIS, May 5.—A survey of 27 foundries in the St. Louis district made by salesmen for a leading maker reveals that 25 are fully covered on their pig iron requirements for the second quarter—two of these having sufficient iron to last throughout the third quarter and one is fully covered for the remainder of this year. This situation reveals why buying of pig iron has been so light and why there is likely to be no further buying, except for third quarter requirements. The market is weaker and prices lower. Northern iron has been offered as low as \$21, Chicago, without stimulating any buying. St. Louis Coke & Iron Co. is quoting \$21.50 to \$22.50, Granite City, and the range of Southern iron is from \$18.50 to \$21.50. The principal inquiry is for 500 tons of foundry iron for a St. Louis manufacturer, and a western Illinois manufacturer is in the market for 400 tons for second quarter. A Granite City maker sold between 400 and 600 tons during the week in lots of carloads up to 100 tons.

We quote delivered consumers' yards, St. Louis, as follows, having added to furnace prices, \$2.16 freight from Chicago, \$3.28 from Florence and Sheffield (rail and water), \$5.17 from Birmingham, all rail, and 81c. average switching charge from Granite City.

Northern fdy., sil. 1.75 to 2.25	\$23.16 to \$24.16
Northern malleable, sil. 1.75 to 2.25	23.16 to 24.16
Basic	24.16 to 24.66
Alabama fdy., sil. 1.75 to 2.25	25.17
(rail)	25.17
Alabama fdy., sil. 1.75 to 2.25	23.28
(rail and water)	21.78
Tennessee fdy., sil. 1.75 to 2.25	22.31 to 23.31
Granite City iron, sil. 1.75 to 2.25	22.31 to 23.31

Finished Iron and Steel.—Building permits were issued in St. Louis last month for improvements of the value of \$8,960,385, the steel for which had already been contracted for, with the exception of the Skouras Brothers theater building, a \$2,600,000 structure, requiring 5500 tons of steel, and the Western Union Building, 500 tons of reinforcing bars. The latter went this week to the Laclede Steel Co. While business generally is still quiet, a slight improvement is noted in buying by warehouses and manufacturers of steel products in the district. Stocks in hand are very low, and under ordinary conditions buying should be heavy, but the policy of purchasing only in small lots for immediate requirements still prevails. Little new business is coming from the railroads.

For stock out of warehouse we quote: Soft steel bars, 3.15c. per lb.; iron bars, 3.15c.; structural shapes, 3.25c.; tank plates, 3.45c.; No. 10 blue annealed sheets, 3.90c.; No. 28 black sheets, cold rolled, one pass, 4.80c.; galvanized steel sheets, No. 28, 5.80c.; blank corrugated sheets, 4.95c.; galvanized, 5.95c.; cold-rolled rounds, shafting and screw stock, 3.95c.; structural rivets, 3.65c.; boiler rivets, 3.85c.; tank rivets, $\frac{3}{4}$ in. diameter and smaller, 70 per cent off list; machine bolts, 55 per cent; carriage bolts, 50 per cent; lag screws, 60 per cent; hot pressed nuts, squares, \$3.50; hexagons, blank or tapped, \$4 off list.

Coke.—Demand for foundry coke is holding up fairly well, shipments from the Granite City ovens last month being about 25 per cent greater than in April, 1924. While contracts have been made for domestic coke by dealers, shipping specifications are not forthcoming, and it likely will be several months before there is any movement.

Old Material.—The market for old material continues weak. A few items have declined while others are just about holding their own. Since the decline set in, buying by dealers has been very light and their stocks are low. Not much old material is being offered by country dealers, who are turning their attention to other waste products because of the low price of scrap. The Pennsylvania System issued a list of 60,000 tons, which is said to be the largest ever issued by any railroad. Other lists include Chicago & Alton,

1850 tons; St. Louis-San Francisco, 1100 tons; Missouri Pacific, 2300 tons; Big Four, 500 tons.

We quote dealers' prices f.o.b. consumers' works, St. Louis industrial district and dealers' yards, as follows:

Per Gross Ton	
Iron rails	\$12.00 to \$12.50
Rails for rolling	16.25 to 16.75
Steel rails less than 3 ft.	17.00 to 17.50
Relaying rails, 60 lb. and under	25.00 to 26.00
Relaying rails, 70 lb. and under	30.00 to 30.50
Cast iron car wheels	15.50 to 16.00
Heavy melting steel	14.00 to 14.50
Heavy shoveling steel	14.00 to 14.50
Frogs, switches and guards cut apart	14.50 to 15.00
Railroad springs	17.50 to 18.00
Heavy axles and tire turnings	11.25 to 11.75
No. 1 locomotive tires	16.50 to 17.00
Per Net Ton	
Steel angle bars	13.50 to 14.00
Steel car axles	15.50 to 16.00
Iron car axles	24.00 to 24.50
Wrought iron bars and transoms	18.00 to 18.50
No. 1 railroad wrought	12.50 to 13.00
No. 2 railroad wrought	12.50 to 13.00
Cast iron borings	10.00 to 10.50
No. 1 busheling	11.00 to 11.50
No. 1 railroad cast	15.00 to 15.50
No. 1 machinery cast	17.50 to 18.00
Railroad malleable	12.75 to 13.25
Machine shop turnings	7.00 to 7.50
Champion bundled sheets	8.00 to 8.50

Birmingham

Pig Iron Production Curtailed as Demand Lags—Prices Nominal

BIRMINGHAM, ALA., May 5.—The nominal quotations for pig iron are unchanged, and the same state of affairs is apparent as to purchasing and consumption, some of the medium sized companies buying for immediate needs only. The production in Alabama has been curtailed, the Sloss-Sheffield Steel & Iron Co. on May 1 blowing out one of the Etowah furnaces and the Hattie furnace at Sheffield, leaving five in operation with that company. Two other blast furnaces of this State are scheduled to go out of commission in the next week or two. The stacks are left in condition to resume operation on the shortest notice, however. The local consumption has shown some decrease recently, the cast iron soil pipe and fittings trade in particular lagging. The surplus iron on yards is greater now than it has been in six months. Both furnace interests and consumers express confidence in the future, looking for a change for the better.

We quote per gross ton, f.o.b. Birmingham district furnaces, as follows:

No. 2 foundry, 1.75 to 2.25 sil.	\$20.00
No. 1 foundry, 2.25 to 2.75 sil.	20.50
Basic	20.00
Charcoal, warm blast	30.00

Steel.—Plants of the United States Steel Corporation in this district are operating to a little under 100 per cent, while the Gulf States Steel Co., independent, is going at about 60 per cent in the open-hearth furnace department and 85 per cent in the finishing mills. The steel demand, on the whole, has been lagging a little. Fabricating plants of the district are reporting considerable new business coming in, though in small tonnages. The new plant of Reeves Bros., Inc., to manufacture tanks and tank cars, will be completed within 60 days. Soft steel bars are quoted 2.15c. to 2.25c., Birmingham.

Cast Iron Pipe.—Cast iron pressure pipe plants of this district are in steady operation and some few lettings are being reported, despite competition of foreign-made pipe. A large quantity of pressure pipe is due customers on contracts booked and future business is promising. The McWane Cast Iron Pipe Co. addition to plant is about completed and will be in full operation shortly.

Coke.—No change in the coke market has taken place so far but blowing out of blast furnaces will probably be felt at some of the by-product plants. Quotations for coke are around \$5 per ton for foundry grades.

Old Material.—The fact that the Tennessee Coal, Iron & Railroad Co. has become a purchaser of scrap on the open market and that one of the larger old material dealers of the country has plans for opening a

yard in Birmingham are features of the scrap iron and steel market here. The trade outside of the Steel Corporation business is still slow and the quotations are low and unchanged.

We quote per gross ton, f.o.b. Birmingham, district yards, as follows:

Cast iron borings, chemical	\$15.00 to \$16.00
Heavy melting steel	13.00 to 14.00
Railroad wrought	12.00 to 13.00
Steel axles	17.00 to 18.00
Iron axles	18.00 to 19.00
Steel rails	13.00 to 14.00
No. 1 cast	16.50 to 17.00
Tramcar wheels	16.50 to 17.00
Car wheels	15.00 to 16.00
Stove plate	13.00 to 14.00
Machine shop turnings	7.00 to 8.00
Cast iron borings	8.00 to 9.00
Rails for rolling	16.50 to 17.00

Boston

Buffalo Furnaces Take Sizable Business at Price Concessions

BOSTON, May 5.—Considerable pig iron was sold in this territory the past week, and a sizable business gives promise of closing shortly. Unfilled business includes 5000 tons or more No. 2 plain third quarter wanted by a heater manufacturer of Massachusetts, 1000 tons No. 2X and 1000 tons No. 1X, third quarter, for a Rhode Island concern; two 1000-ton lots of No. 2X and No. 1X mixed for as many Connecticut foundries; 1000 tons No. 2X for a New Hampshire concern, which possibly has been bought by this time; and 150- to 500-ton lots from close to a score of melters. Some of the inquiries are open, while others are confined to one or two pig iron agencies. Sales the past week, amounting to a considerable tonnage, were made almost exclusively by Buffalo district furnaces or furnaces carrying the Buffalo freight rate into New England. Silicon differentials have been thrown into the discard. Virtually all sales were made at \$19 furnace, or \$23.91 delivered, for No. 2 plain and No. 2X. For No. 1X \$19 was done, but in justice it should be said that sales on this grade ran as high as \$21 furnace, or \$25.91 delivered. So keen is competition among Buffalo interests for business that the smallest order has received as much consideration as the largest in the matter of price. Certain eastern Pennsylvania furnaces have made concessions on a limited amount of business, but are still out of line with Buffalo prices, and a belated cutting of Virginia iron prices of \$1.25 a ton has availed little. Alabama iron is pegged at \$22 furnace in so far as New England is concerned. Foreign iron is sidetracked, temporarily, at least. A small consignment of German iron arrived at this port the past week.

We quote delivery prices on the basis of the latest sales as follows, having added \$3.65 freight from eastern Pennsylvania, \$4.91 from Buffalo, \$5.92 from Virginia and \$9.60 from Alabama:

East. Penn., sil. 1.75 to 2.25	\$24.15 to \$24.65
East. Penn., sil. 2.25 to 2.75	24.65 to 25.15
Buffalo, sil. 1.75 to 2.25	23.91 to 24.91
Buffalo, sil. 2.25 to 2.75	23.91 to 25.40
Virginia, sil. 1.75 to 2.25	28.67 to 29.42
Virginia, sil. 2.25 to 2.75	29.17 to 29.92
Alabama, sil. 1.75 to 2.25	31.60
Alabama, sil. 2.25 to 2.75	32.10

Coke.—Producers of by-product foundry coke in this district have announced that the May price on specifications against contracts is \$11.50 a ton delivered within New England, the same price prevailing last month. Official indications as to when coke producers will open their books for last half contracts are lacking, but it is intimated it will be about May 20 or later. A large percentage of users have a verbal agreement with sellers that they will cover requirements, consequently it is a foregone conclusion that New England foundries will not purchase much fuel outside this territory. Current specifications against first half contracts are holding up remarkably well, suggesting that the ratio of melt in this territory is holding its own, while business in other industries is falling off.

Old Material.—While business in pig iron is increasing, the old material market is growing less active. Transactions in heavy melting steel are few and far be-

tween and usually for Phillipsdale or Worcester. For the former \$10 on cars usually is paid by buyers, while for Worcester this price is occasionally shaded 25c. Machine shop turnings and mixed borings and turnings figure in sales to a limited extent, for eastern Pennsylvania delivery, usually on a \$12.50 delivered basis, or around \$7.50 on cars New England. Chemical borings bring no more than heavy melting steel and are hard to dispose of. A few lots of bundled skeleton in long bundles have been taken at around \$7.50 on cars and short bundles at \$9. New England foundries continue to nibble at No. 1 machinery cast at \$18.50 to \$19 delivered, and strictly No. 1 textile at about \$19.50. Yesterday the Boston & Albany Railroad closed bids on approximately 2250 tons of material offered for sale, the largest items of which were 800 tons each of heavy melting steel and rerolling rails.

The following prices are for gross ton lots delivered consuming points:

No. 1 machinery cast.....	\$18.50 to \$19.50
No. 2 machinery cast.....	16.50 to 17.50
Stove plates	13.00 to 13.50
Railroad malleable	18.00 to 13.00

The following prices are offered per gross ton lots, f.o.b. Boston rate shipping points:

No. 1 heavy melting steel.....	\$10.00 to \$11.00
No. 1 railroad wrought.....	13.00 to 13.50
No. 1 yard wrought.....	12.00 to 12.50
Wrought pipe (1-in. in diam. over 2 ft. long).....	10.00 to 10.50
Machine shop turnings.....	7.00 to 7.50
Cast iron borings, chemical.....	10.00 to 10.50
Cast iron borings, rolling mill.....	7.50 to 8.00
Blast furnace borings and turnings.....	6.75 to 7.25
Forge scrap, steel mill use.....	8.50 to 9.00
Forge scrap, ordinary.....	7.50 to 8.00
Bundled skeleton, long.....	7.00 to 7.50
Bundled skeleton, short.....	9.00 to 9.25
Bundled cotton ties, long.....	8.00 to 8.50
Forged flashings	8.00 to 8.50
Shafting	17.00 to 17.50
Street car axles.....	17.00 to 17.50
Rails for rerolling.....	11.50 to 12.50
Scrap rails	10.00 to 10.50

Cleveland

Efforts to Advance Steel Prices Continue, but Concessions Are Still Made

CLEVELAND, May 5.—Several of the mills have advanced their price on steel bars, plates and shapes to 2.10c., at which some business has been taken, but all producers have not joined in this movement to mark up prices \$2 a ton, so that at the present time the market is commonly represented by a range between the two quotations. While the attempt is being made to definitely move prices upward, a quotation of 1.90c. on plates has appeared in this territory, or \$2 a ton lower than the recent minimum and several of the small plate mills are not trying to get above 2c.

The attempt to advance prices so far has not had the effect of stimulating purchases and consumers as a rule are following their recent policy of buying only what they need for immediate requirements and are asking for quick deliveries. There still seems to be considerable uncertainty among consumers as to whether the common minimum market quotations will hold to 2c. and this is causing hesitation in buying. The volume of new business is rather light and about the same as in recent weeks, although there is a little improvement in plates. Orders are fairly numerous, but they are for small lots. There is little new inquiry in the building field or for round lots of steel for specific construction work. A Cleveland company is figuring on an export order for Chile that will require 360 tons of structural material.

Pig Iron.—The pig iron market is showing some activity after a long period of dullness. This is more in inquiry than in actual sales, although sales improved somewhat during the week. Pending inquiries may be divided into two classifications. These are partly from foundries that will need some iron for the remainder of the second quarter in addition to that carried over from the first quarter and are inquiring for iron to

carry them through the third quarter. The remaining inquiries are from foundries that are feeling the market for low prices and think that they should be able to buy at around \$18.50. Some are willing to take in the iron immediately if they can buy at this price. Among what are regarded as live inquiries is one for 4000 to 5000 tons of foundry iron and several for 500 to 1000 ton lots for deliveries extending through the third quarter. One producer sold 10,000 tons during the week scattered among various industries. Sales by other furnaces were in small lots and their aggregate tonnage was not large. The market lacks strength although there is no evidence that the \$20 Valley price is being shaded. However, this price is being named for car lots and frequently the usual differential for high silicon iron is being waived. The price in Michigan and some other points outside the zone of Valley competition has further declined 50c. a ton to \$20.50, but Lake furnaces are generally on a \$20 basis for shipment to points that are more keenly competitive. Small lot sales in Cleveland were made during the week at \$21.50 furnace for local delivery. While the market is untested, it is evident that not above \$21 would be quoted on a round lot inquiry.

Quotations below, except on basic and low phosphorus iron, are delivered Cleveland, and for local iron include a 50c. switching charge. Ohio silvery and Southern iron prices are based on a \$3.02 freight rate from Jackson and \$6 from Birmingham:

Basic, Valley furnace	\$20.00
N'th'n No. 2 fdy., sil. 1.75 to 2.25.....	\$21.50 to 22.00
Southern fdy., sil. 1.75 to 2.25.....	24.50 to 26.01
Malleable	21.50 to 22.00
Ohio silvery, 8 per cent.....	29.52
Standard low phos., Valley furnace	28.50

Iron Ore.—The market is not very active. Most consumers who needed ore for early in the season have covered for their requirements. Some furnaces have inquiries out, but others that will not need ore for some time seem to be in no hurry to buy. There is some shopping around in efforts to find prices lower than regular quotations, but so far there has been no evidence of concessions from regular prices. Ore shipments last month were unusually large for April, this being due to the early opening of the season of navigation rather than much demand for early cargoes. The shipments for the month were 2,120,670 tons as compared with 659,387 tons during April last year.

Bolts, Nuts and Rivets.—The demand for bolts and nuts is holding up well, owing largely to the present heavy consumption by the automotive industry. The Ford Motor Co., because of an increase in its production schedule, placed orders last week for a large quantity of bolts and nuts and cap screws. Prices are firm. Rivets are in fair demand and somewhat irregular, although the leading local manufacturer announces that it will not shade the 2.60c. price.

Jobbers quote steel bars, 3.10c.; plates and structural shapes, 3.20c.; No. 28 black sheets, 4.25c.; No. 28 galvanized sheets, 5.35c.; No. 10 blue annealed sheets, 2.35c. to 3.50c.; cold-rolled rounds, 4c.; flats, squares and hexagons, 4.50c.; hoops and bands, 3.85c.; No. 9 annealed wire, \$3.05 per 100 lb.; No. 9 galvanized wire, \$3.50 per 100 lb.; common wire nails, \$3.15 base per 100 lb.

Fluorspar.—The price has declined 50c. a ton to \$18.50 for 85 per cent, but a round lot inquiry would probably bring out an \$18 price. New demand is very light as most consumers are under contract.

Semi-Finished Steel.—Some inquiry is coming out for sheet bars, but mills do not seem willing to pay over \$35 in view of the weak condition of the sheet market. A local mill which is holding to \$37.50, Cleveland, sold during the week 1000 tons for immediate delivery at that price. Shipments on contracts are dragging and some mills are holding up material.

Sheets.—Mills are getting good specifications and some new business from the automotive industry, but there is little demand from other sources. Black sheets are still irregular with the usual minimum quotation of 3.30c. although there are reports of prices ranging from 3.20c. to 3.25c. On blue annealed sheets 2.40c. is being more frequently quoted than last week, although most mills are holding to a 2.50c. minimum. On galvanized sheets 4.40c. is the fairly common quotation and automobile body sheets are firm at the same price.

Strip Steel.—Demand is light, but prices on hot-

rolled strip appear a little firmer. A Cleveland mill that has been selling wide strip at 2.20c. Cleveland, is now using a Pittsburgh base with the same quotation. Hoops and bands are firm at 2.40c. Weakness has developed in cold-rolled strip steel, which has sold at 3.75c. for one pass material and 3.85c. and possibly lower for regular stock.

Old Material.—Prices, after holding fairly steady for a few weeks, have declined 25c. to \$1 a ton on about all grades except borings and turnings. Heavy melting steel is down to \$14.75, Cleveland, at which small lot sales have been made. Very little scrap is moving, and that is partly distress material. While the demand is very light, the amount that is being offered is quite limited. Dealers are not buying scrap to lay down. The Big Four Railroad will close May 7 on a blank list.

We quote dealers' prices f.o.b. Cleveland per gross ton:

Heavy melting steel.....	\$14.75 to \$15.00
Rails for rolling.....	15.50 to 16.00
Rails under 3 ft.....	17.75 to 18.00
Low phosphorus melting.....	18.25 to 18.50
Cast iron borings.....	12.00 to 12.50
Machine shop turnings.....	12.00 to 12.50
Mixed borings and short turnings.....	12.00 to 12.50
Compressed sheet steel.....	12.75 to 13.00
Railroad wrought.....	12.00 to 12.25
Railroad malleable.....	17.25 to 17.50
Light bundled sheet stampings.....	11.00 to 11.50
Steel axle turnings.....	13.00 to 13.25
No. 1 cast.....	17.00 to 17.50
No. 1 busheling.....	12.00 to 12.25
Drop forge flashings.....	11.00 to 11.50
Railroad grate bars.....	13.00 to 13.25
Stove plate.....	13.00 to 13.25
Pipes and flues.....	7.50 to 8.00

Philadelphia

Effort Made to Stabilize Finished Steel at 2.10c.—Plates Still Weak

PHILADELPHIA, May 5.—Transactions in all markets are confined to purchases of small lots. Curtailment of production to bring it more in line with consumption continues among the mills, which are estimated in eastern Pennsylvania to be operating at from 50 to 60 per cent of capacity. With Pittsburgh mills endeavoring to stabilize bars, shapes and plates at 2.10c. per lb., base, the leading independent in eastern Pennsylvania has quoted on this basis for bars and shapes, but the going market is still not above 2c. per lb., base, with most eastern Pennsylvania producers.

There is apparently slightly more stability in the pig iron market, at least temporarily bolstered up by a continuation of the small tonnage business reported last week. Old material is still weak on all grades, but evidences but little further decline.

Ferromanganese.—Following a few transactions in resale material at \$112 per ton, reported last week, the market has settled into almost unbroken quiet. Most users are apparently well covered to the end of the first half of the year and in no hurry to anticipate future needs.

Billets.—Re-rolling billets continue quiet with quotations at \$35.50 to \$36 per ton, Pittsburgh, and makers asking \$5 differential for forging quality.

Pig Iron.—Although eastern Pennsylvania furnaces have touched low levels on foundry iron sales in the New England district, where competition with other producers is keen, the local market still ranges from \$20.50 to \$21 per ton, furnace, the latter price applying almost exclusively on the smaller lots. Third quarter inquiry has not yet developed, buyers apparently holding back until the last minute to take advantage of any further decline in prices. Sellers of foreign iron are meeting the current domestic quotations in disposing of pig iron coming to them on contract, but are not making new purchases of the foreign product. Warwick furnace at Pottstown is scheduled to blow out at the end of this week and the furnace of the Delaware River Steel Co. at Chester will go in blast at about the same time. Basic is quiet, but one sale of

a fair-sized tonnage is reported to have been made recently. There is some light inquiry for low phosphorus.

The following quotations are, with the exception of those on low phosphorus iron, for delivery at Philadelphia and include freight rate varying from 76c. to \$1.63 per gross ton:

East. Pa. No. 2 plain, 1.75 to 2.25 sil.....	\$21.26 to \$22.13
East. Pa. No. 2X, 2.25 to 2.75 sil.....	21.76 to 22.63
East. Pa. No. 1X.....	22.26 to 23.13
Virginia No. 2 plain, 1.75 to 2.25 sil.....	28.67 to 29.17
Virginia No. 2X, 2.25 to 2.75 sil.....	29.17 to 29.67
Basic delivery eastern Pa.....	21.00 to 21.50
Gray forge.....	21.50 to 22.00
Malleable.....	22.50 to 23.00
Standard low phos. (f.o.b. furnace).....	24.00 to 25.00
Copper bearing low phos. (f.o.b. furnace).....	25.00 to 26.00

Various grades of foreign pig iron are being offered at approximately the prices quoted below, all quotations being f.o.b. cars, Philadelphia:

Indian foundry iron, 2 to 2.50 per cent sil.....	\$22.25 to \$23.25
Indian foundry iron, 2.25 to 3 per cent sil.....	22.75 to 23.75
English foundry iron, 2 to 2.50 per cent sil.....	22.50 to 23.00
Continental foundry, 2.50 to 3 per cent sil.....	22.50 to 23.00
English low phos., copper free...	26.00

Bars.—The leading independent in eastern Pennsylvania has established a schedule of 2.10c. per lb., base Pittsburgh, on bars and shapes, apparently in sympathy with the movement of Pittsburgh mills to stabilize the market at this level. Other eastern Pennsylvania mills, however, are still at the 2c. per lb. base, which is only moderately firm.

Shapes.—The market seems fairly firm at 2c. per lb., base, with 2.10c. per lb. a possible level, provided the effort of Pittsburgh makers and the leading independent are successful.

Plates.—The current quotation of 2c. per lb., Pittsburgh, is the top of the market in eastern Pennsylvania, applying on the small miscellaneous specifications of which the major part of present business consists. On anything like a substantial tonnage, concessions of from \$1 to \$2 seem to be a possibility.

Warehouse Business.—Quotations out of stock on bars, shapes and plates can only be considered as nominal at 3.20c. per lb., base, applicable to exceedingly small orders. Lots of a few tons that bring the mills into competition with the warehouses develop prices as low as 2.90c. per lb., base, on occasion. Swedish iron bars are not quotable at more than 6.50c. per lb. on most transactions.

Old Material.—The slight impetus given to prices of certain grades when a Harrisburg, Pa., consumer came into the market for small tonnages of bundled sheets, machine shop turnings, stove plate, heavy breakable cast and heavy melting steel, has disappeared and the market is again weak. No. 1 heavy melting steel is not particularly firm at \$14.50 to \$15 per ton, there being reports of small purchases at less than these prices. The leading eastern Pennsylvania consumer for some time taking shipments of borings and turnings, is temporarily out of the market on this grade.

We quote for delivery consuming points in this district as follows:

No. 1 heavy melting steel.....	\$14.50 to \$15.00
Scrap rails.....	14.50 to 15.00
Steel rails for rolling.....	17.00 to 17.50
No. 1 low phos. heavy 0.04 and under.....	20.00 to 21.00
Couplers and knuckles.....	19.00 to 19.50
Rolled steel wheels.....	18.50 to 19.00
Cast-iron car wheels.....	17.00 to 17.50
No. 1 railroad wrought.....	17.50 to 18.00
No. 1 yard wrought.....	16.50 to 17.00
No. 1 forge fire.....	14.00 to 14.50
Bundled sheets (for steel works).....	12.00 to 12.50
Mixed borings and turnings (for blast furnace use).....	11.50 to 12.00
Machine shop turnings (for steel works use).....	12.00 to 12.50
Machine shop turnings (for rolling mill use).....	12.50
Heavy axle turnings (or equivalent).....	14.50 to 15.50
Cast borings (for steel works and rolling mill).....	12.00 to 12.50
Cast borings (for chemical plants).....	16.50 to 17.00
No. 1 cast.....	17.00 to 17.50
Heavy breakable cast (for steel plants).....	15.00 to 15.50
Railroad grate bars.....	12.50 to 13.00
Stove plate (for steel plant use).....	12.50 to 13.00
Wrought iron and soft steel pipes and tubes (new specifications).....	14.50 to 15.00
Shafting.....	21.00 to 22.00
Steel axles.....	21.50 to 22.50

NON-FERROUS METALS

The Week's Prices

Cents per Pound for Early Delivery

	Copper, New York		Straits Tin (Spot)	Lead		Zinc	
	Lake	Electro- lytic*	New York	New York	St. Louis	New York	St. Louis
April							
29.....	13.75	13.50	56.00	7.85	7.60	7.30	6.95
30.....	13.75	13.37½	54.62½	7.85	7.55	7.22½	6.87½
May							
1.....	13.75	13.12½	53.45	7.75	7.40	7.12½	6.77½
2.....	13.75	13.25	.....	7.75	7.40	7.17½	6.82½
4.....	13.75	13.25	53.95	7.75	7.45	7.25	6.90
5.....	13.75	13.37½	54.62½	7.75	7.45	7.27½	6.92½

*Refinery quotation; delivered price ¼c. higher.

New York

NEW YORK, May 5.

Speculative liquidation in London markets last week unsettled all the markets here and prices are lower in most cases. Buying is only moderate in any market.

Copper.—Just as electrolytic copper was apparently getting firmer last week with the market fairly steady at 13.62½c. to 13.75c., delivered, the London market upset the equilibrium. Speculative liquidation over there was the prime cause. Dealers and others in that market, fearing higher money rates because of the financial situation as to gold, sold freely. This was reflected in lower prices here, at least by some sellers. Quotations went as low as 13.37½c., delivered, on May 1. One large consumer bought about 1000 tons at 13.37½c. to 13.50c., delivered. A better tone now prevails and the market is now slowly regaining its poise. While sales are light and the market is dull, there is more activity from consumers. The export market is firmer with 13.50c. to 13.55c., f.a.s. bid today as against 13.45c., yesterday. Late today the market was quotable at 13.62½c., delivered. Lake copper is largely nominal at 13.75c., delivered.

Copper Averages.—The average price of Lake copper for the month of April, based on daily quotations in THE IRON AGE, was 13.65½c. The average price of electrolytic copper was 13.50c., refinery, or 13.75c., delivered.

Tin.—Large consumers continue to show little interest in the market, but small consumers and spot buyers have made moderate purchases. The market has been fairly active, due partly to dealers covering short contracts. The sharp decline in the London market on May 1 and 2 is regarded as something of a mystery, with prices falling here about 2½c. from the high point on this movement. At the decline Friday the market was quite active, with 300 tons changing hands, but since then dullness has prevailed with very light sales yesterday, 150 to 200 tons, but a better tone today. Spot Straits tin was quoted today at 54.62½c., New York, with light sales, mostly futures. In the London market prices were about £5 per ton less than a week ago, with spot Standard quoted at £241 5s., future standard at £244 and spot Straits at £247 5s. The quotation at Singapore yesterday was £246 5s. Monthly deliveries into consumption in April at 6655 tons were not far from early estimates. On April 30 there were 1459 tons in stock and 850 tons landing.

Lead.—During the week prices worked down about 20 points, due to the weakness in London. Business was done as low as 7.40c., St. Louis, and 7.75c., New York, in the outside market. The leading interest continues its contract price at 7.75c., New York, both markets being on a parity. Yesterday conditions had improved and more inquiry was in evidence, but it was not large. With the London market higher today, prices here are firm at 7.45c., St. Louis, or 7.75c., New York.

Zinc.—The general weakness carried prime Western zinc down to 6.75c. to 6.80c., St. Louis, late last week, at which level there was some buying. Consumers, however, are well covered and producers are not pressing the market. In sympathy with other metals the market has turned stronger and quotations today are

6.90c. to 6.95c., St. Louis, or 7.25c. to 7.30c., New York.

Nickel.—Wholesale lots of shot and ingot nickel are quoted at 31c. to 32c. per lb. and electrolytic nickel at 38c.

Aluminum.—Virgin metal, 98 to 99 per cent pure, is quoted at 27c. to 28c. per lb., delivered.

Antimony.—Chinese metal in wholesale lots for prompt and early delivery is up to 13c., New York, duty paid. Some lots recently arrived turned out to be consigned to consumers.

Old Metals.—The market is unsettled, due to the uncertain movements in ingot metals. Dealers' selling prices are as follows in cents per lb.:

Copper, heavy and crucible.....	12.75
Copper, heavy and wire.....	12.00
Copper, light and bottoms.....	10.50
Heavy, machine composition.....	9.875
Brass, heavy.....	8.00
Brass, light.....	6.75
No. 1 red brass or composition turnings.....	9.00
No. 1 yellow rod brass turnings.....	8.75
Lead, heavy.....	7.00
Lead, tea.....	5.50
Zinc.....	4.50
Cast aluminum.....	19.00
Sheet aluminum.....	19.00

Chicago

MAY 5.—Tendencies are mixed with copper and lead unchanged, tin and zinc lower and antimony higher than a week ago. Buying of copper and lead has been fairly liberal but not in sufficient volume to stiffen the market. Zinc has been quiet, while in antimony there is a shortage of supply. Old metal prices are unchanged, with demand somewhat improved. We quote, in carload lots: Lake copper, 14c.; tin, 55.25c.; lead, 7.50c.; zinc, 6.95c.; in less than carload lots, antimony, 15c. On old metals we quote copper wire, crucible shapes and copper clips, 10.50c.; copper bottoms, 9.25c.; red brass, 8.25c.; yellow brass, 7.25c.; lead pipe, 6.25c.; zinc, 4c.; pewter, No. 1, 28c.; tin foil, 32c.; black tin, 40c.; all buying prices for less than carload lots.

Action on Freight Rates Urged by Meeting at Cincinnati

Establishment of commodity rates from Cincinnati, Middletown and Marion, Ohio, and Newport, Ky., to all points in the territory north of the Ohio and east of the Mississippi River on the same basis as has been laid down by the Interstate Commerce Commission from the Pittsburgh and Chicago districts, was urged in resolutions adopted by representatives of iron and steel companies in Greater Cincinnati at a meeting on April 29 in Cincinnati. The conference also discussed the decision of the Interstate Commerce Commission concerning commodity rates on iron and steel products between points in the Wheeling, Youngstown and Pittsburgh districts and from points in those districts to towns and cities in Indiana and Illinois.

There have been no new important developments in connection with the decision of the Interstate Commerce Commission in the so-called Jones & Laughlin case. At Chicago both Eastern and Western railroads are checking mileages to the points in southern Illinois and in Indiana covered by the Interstate Commerce Commission's decision and until that is done it is unlikely that the carriers will formulate definite plans for the carrying out of the decision. Important shippers in Chicago and immediate vicinity held a preliminary meeting in that city last week and other conferences of shippers are expected to take place soon.

Institute Directors' Election

At the annual business meeting of the American Iron and Steel Institute held at the offices in New York, May 4, all of the directors whose terms had expired were reelected excepting that Alexander Glass, vice-president Wheeling Steel Corporation, declined reelection, and Isaac Scott, president Wheeling Steel Corporation, was elected in his place. The directors reelected were Joseph G. Butler, Jr., Edmund A. S. Clarke, William H. Donner, William J. Filbert, Willis L. King, Samuel Mather and John A. Topping.

Prices of Finished Iron and Steel Products (Carload Lots)

Tank Plates

F.o.b. Pittsburgh mill, base, per lb.....2c. to 2.10c.
F.o.b. Chicago, base, per lb.....2.20c.

Structural Shapes

F.o.b. Pittsburgh mills, base, per lb.....2c. to 2.10c.
F.o.b. Chicago, base, per lb.....2.20c.

Iron and Steel Bars

Soft steel bars f.o.b. P'gh mills, base, per lb.....2c. to 2.10c.
Soft steel bars f.o.b. Chicago, base, per lb.....2.10c. to 2.20c.
Reinforcing steel bars f.o.b. P'gh mills, base, per lb.....2.00c. to 2.10c.
Rail steel bars, f.o.b. Chicago district mills, base, per lb.....2.10c.
Common iron bars, f.o.b. Chicago, base, per lb.....2.10c.
Refined iron bars, f.o.b. P'gh mills, base, per lb.....3.00c.
Common iron bars, eastern Pa. mill, base, per lb.....2.10c.

Hot-Rolled Flats

Hoops, base, per lb., Pittsburgh.....2.40c.
Bands, base, per lb., Pittsburgh.....2.40c.
Strips, 6 in. and narrower, base, per lb., Pittsburgh.....2.40c.
Strips, 6 to 12-in., base, per lb., Pittsburgh.....2.20c.
Strips, 6 in. and narrower, Chicago.....2.50c.
Strips, wider than 6 in., Chicago.....2.40c.
Strips, base, per lb., Chicago.....2.55c. to 2.60c.

Cold-Finished Steel

Screw stock and shafting, f.o.b. P'gh mills, base, per lb..2.70c.
Screw stock and shafting, f.o.b. Chicago, base, per lb., 2.70c. to 2.80c.
Screw stock, base, per lb., Cleveland.....2.75c.
Shafting, ground, f.o.b. mill, base, per lb.....3.10c.
Strips, f.o.b. P'gh mills, base, per lb.....4c.
Strips, f.o.b. Cleveland mills, base, per lb.....3.75c. to 4c.
Strips, f.o.b. delivered Chicago, base, per lb....4.05c. to 4.30c.
Strips, f.o.b. Worcester mills, base, per lb.....4.15c.

Wire Products

(To jobbers in car lots f.o.b. Pittsburgh and Cleveland)

Nails, base, per keg.....\$2.75
Galvanized nails, 1-in. and longer, base plus.....2.25
Galvanized nails, shorter than 1 in., base plus.....2.50
Bright plain wire, base, No. 9 gage, per 100 lb.....2.50
Annealed fence wire, base, per 100 lb.....2.65
Spring wire, base, per 100 lb.....3.50
Galvanized wire, No. 9, base, per 100 lb.....3.10
Galvanized barbed, base, per 100 lb.....3.45
Galvanized staples, base, per keg.....3.45
Painted barbed wire, base, per 100 lb.....3.20
Polished staples, base, per keg.....3.20
Cement coated nails, base, per count keg.....2.10
*Bale ties, carloads, to jobbers....75, 15 and 5 per cent off list
*Bale ties, carloads to retailers....75, 10 and 6 per cent off list
Woven wire fence, base, per net ton to retailers.....\$65.00

Chicago district mill prices are \$2 per ton above the foregoing and Chicago delivered prices are \$3 per ton above the prices f.o.b. Cleveland and Pittsburgh. Birmingham mill prices \$3 a ton higher; Worcester, Mass., mill \$3 a ton higher on production of that plant, and Duluth, Minn., mills \$2 a ton higher; Anderson, Ind., \$1 higher.

*F.o.b. Cleveland.

Sheets

Blue Annealed
(base) per lb.

Nos. 9 and 10, f.o.b. Pittsburgh.....2.40c. to 2.60c.
Nos. 9 and 10 (base) per lb., f.o.b. Chicago dist. mills 2.50c. to 2.60c.

Box Annealed, One Pass Cold Rolled

No. 28 (base) per lb., f.o.b. Pittsburgh.....3.20c. to 3.40c.
No. 28 (base) per lb., f.o.b. Chicago dist. mill..3.40c. to 3.60c.

Galvanized

No. 28 (base) per lb., f.o.b. Pittsburgh.....4.30c. to 4.40c.
No. 28 (base) per lb., f.o.b. Chicago dist. mill..4.50c. to 4.60c.

Tin-Mill Black Plate

No. 28 (base) per lb., f.o.b. Pittsburgh.....3.40c. to 3.50c.
No. 28 (base) per lb., f.o.b. Chicago dist. mill..3.50c. to 3.60c.

Automobile Body Sheets

No. 22 (base) per lb., f.o.b. Pittsburgh.....4.40c.

Long Ternes

No. 28 (base) 8-lb. coating, per lb., f.o.b. mill.....4.90c.

Tin Plate

Standard cokes, per base box, f.o.b. Pittsburgh district mills.....\$5.50
Standard cokes, per base box f.o.b. Chicago district mills 5.60
Standard cokes, per base box f.o.b. Elwood, Ind.....5.60

Terne Plate

(F.o.b. Morgantown or Pittsburgh)
(Per Package, 20 x 28 in.)

8-lb. coating, 100 lb. base.....\$11.20	20-lb. coating I. C....\$15.50
8-lb. coating I. C....11.50	25-lb. coating I. C....17.00
15-lb. coating I. C....14.35	30-lb. coating I. C....18.35
	40-lb. coating I. C....20.35

Rivets

Large, f.o.b. P'gh and Cleveland mills, base, per 100 lb., \$2.50 to \$2.60

Large, f.o.b. Chicago, base, per 100 lb.....2.75
Small, f.o.b. Pittsburgh.....70, 10, 5 per cent off list
Small, Cleveland.....70 and 10 to 70, 10 and 5 per cent off list
Small, Chicago.....70 and 10 per cent off list

Rails and Track Equipment

(F.o.b.)

Rails, standard, per gross ton.....\$43.00
Rails, light, billet, base, per lb.....1.75c. to 1.80c.
Rails, light rail steel, base, per lb.....1.65c. to 1.75c.
Spikes, $\frac{1}{4}$ in. and larger, base, per 100 lb.....\$2.80 to \$3.10
Spikes, $\frac{1}{2}$ in. and smaller, base, per 100 lb.....3.10 to 3.40
Spikes, boat and barge, base, per 100 lb.....3.25
Track bolts, all sizes, base, per 100 lb.....3.90 to 4.25
Tie plates, per 100 lb.....2.35 to 2.40
Angle bars, base, per 100 lb.....2.75

Welded Pipe

(F.o.b. Pittsburgh district mills)

Butt Weld

Inches	Steel Black	Galv.	Inches	Iron Black	Galv.
$\frac{1}{8}$ to $\frac{1}{4}$	45	19 $\frac{1}{2}$	$\frac{1}{4}$ to $\frac{1}{2}$	+11	+39
$\frac{1}{4}$ to $\frac{3}{8}$	51	25 $\frac{1}{2}$	$\frac{1}{2}$ to $\frac{3}{4}$	22	2
$\frac{3}{8}$ to $\frac{1}{2}$	56	42 $\frac{1}{2}$	$\frac{3}{4}$ to 1	28	11
$\frac{1}{2}$ to $\frac{5}{8}$	60	48 $\frac{1}{2}$	1 to 1 $\frac{1}{2}$	30	13
1 to 3	62	50 $\frac{1}{2}$			

Lap Weld

Inches	Steel Black	Galv.	Inches	Iron Black	Galv.
2	55	43 $\frac{1}{2}$	2	23	7
2 $\frac{1}{2}$ to 6	59	47 $\frac{1}{2}$	2 $\frac{1}{2}$	26	11
7 and 8	56	43 $\frac{1}{2}$	3 to 6	28	13
9 and 10	54	41 $\frac{1}{2}$	7 to 12	26	11
11 and 12	53	40 $\frac{1}{2}$			

Butt Weld, extra strong, plain ends

Inches	Steel Black	Galv.	Inches	Iron Black	Galv.
$\frac{1}{8}$ to $\frac{1}{4}$	41	24 $\frac{1}{2}$	2 to 3	61	50 $\frac{1}{2}$
$\frac{1}{4}$ to $\frac{3}{8}$	47	30 $\frac{1}{2}$	$\frac{1}{4}$ to $\frac{1}{2}$	+11	+54
$\frac{3}{8}$ to $\frac{1}{2}$	53	42 $\frac{1}{2}$	$\frac{1}{2}$ to $\frac{3}{4}$	21	7
$\frac{1}{2}$ to 1	58	47 $\frac{1}{2}$	$\frac{3}{4}$ to 1	28	12
1 to 1 $\frac{1}{2}$	60	49 $\frac{1}{2}$	1 to 1 $\frac{1}{2}$	30	14

Lap Weld, extra strong, plain ends

Inches	Steel Black	Galv.	Inches	Iron Black	Galv.
2	53	42 $\frac{1}{2}$	2	23	9
2 $\frac{1}{2}$ to 4	57	46 $\frac{1}{2}$	2 $\frac{1}{2}$ to 4	29	15
4 $\frac{1}{2}$ to 6	56	45 $\frac{1}{2}$	4 $\frac{1}{2}$ to 6	28	14
7 to 8	52	39 $\frac{1}{2}$	7 to 8	21	7
9 and 10	45	32 $\frac{1}{2}$	9 to 12	16	2
11 and 12	44	31 $\frac{1}{2}$			

To the large jobbing trade the above discounts on steel pipe are increased (on black) by one point, with supplementary discount of 5 per cent and (on galvanized) by 1 $\frac{1}{2}$ points, with supplementary discount of 5 per cent. On iron pipe, both black and galvanized, the preferentials to large jobbers are 1, 5 and 2 $\frac{1}{2}$ per cent beyond the above discount.

NOTE—The above discounts on steel pipe also apply at Lorain, Ohio. Chicago district mills have a base 2 points less. Chicago delivered base 2 $\frac{1}{2}$ points less. Freight is figured from Pittsburgh, Lorain, Ohio, and Chicago district mills, the billing being from the point having the lowest rate to destination.

Boiler Tubes

(F.o.b. Pittsburgh)

Lap Welded Steel	Charcoal Iron
2 to 2 $\frac{1}{4}$ in.....27	1 $\frac{1}{4}$ in.....+18
2 $\frac{1}{2}$ to 2 $\frac{3}{4}$ in.....37	1 $\frac{1}{2}$ to 1 $\frac{3}{4}$ in.....+8
3 in.....40	2 to 2 $\frac{1}{4}$ in.....2
3 $\frac{1}{4}$ to 3 $\frac{1}{2}$ in.....42 $\frac{1}{2}$	2 $\frac{1}{4}$ to 3 in.....7
4 to 13 in.....46	3 $\frac{1}{4}$ to 4 $\frac{1}{2}$ in.....9

Beyond the above discounts, 5 fives extra are given on lap welded steel tubes and 2 tens on charcoal iron tubes.

Standard Commercial Seamless Boiler Tubes

Cold Drawn

Inches	Galv.	Inches	Galv.
1 in.....60	3 in.....45		
1 $\frac{1}{4}$ and 1 $\frac{1}{2}$ in.....52	3 $\frac{1}{4}$ to 3 $\frac{1}{2}$ in.....47		
1 $\frac{3}{4}$ in.....36	4 in.....50		
2 and 2 $\frac{1}{4}$ in.....31	4 $\frac{1}{2}$, 5 and 6 in.....45		
2 $\frac{1}{2}$ and 2 $\frac{3}{4}$ in.....39			

Hot-Rolled

Inches	Galv.	Inches	Galv.
2 and 2 $\frac{1}{4}$ in.....34	3 $\frac{1}{4}$ and 3 $\frac{1}{2}$ in.....50		
2 $\frac{1}{2}$ and 2 $\frac{3}{4}$ in.....42	4 in.....53		
3 in.....48	4 $\frac{1}{2}$, 5 and 6 in.....48		

Less carloads, 4 points less. Add \$8 per net ton for more than four gages heavier than standard. No extra for lengths up to and including 24 ft. Sizes smaller than 1 in. and lighter than standard gage to be held at mechanical tube list and discount. Intermediate sizes and gages not listed take price of next larger outside diameter and heavier gage.

Seamless Mechanical Tubing

Carbon under 0.30 base.....85 to 87 per cent off list
Carbon 0.30 to 0.40 base.....83 to 85 per cent off list
Plus usual differentials and extra for cutting. Warehouse discounts range higher.

Seamless Locomotive and Superheater Tubes

2-in. O.D. 12 gage.....14 $\frac{1}{4}$	2 $\frac{1}{2}$ -in. O.D. 10 gage.....18
2-in. O.D. 11 gage.....15	3-in. O.D. 7 gage.....33
2-in. O.D. 10 gage.....16	1 $\frac{1}{4}$ -in. O.D. 9 gage.....15
2 $\frac{1}{4}$ -in. O.D. 12 gage.....16	5 $\frac{1}{2}$ -in. O.D. 9 gage.....50
2 $\frac{1}{2}$ -in. O.D. 11 gage.....17	5 $\frac{1}{2}$ -in. O.D. 9 gage.....52

Prices of Iron and Steel Products and Raw Materials

Ores

Lake Superior Ores, Delivered Lower Lake Ports

Old range Bessemer, 51.50 per cent iron.....	\$4.55
Old range non-Bessemer, 51½ per cent iron.....	4.40
Mesabi Bessemer, 51.50 per cent iron.....	4.40
Mesabi non-Bessemer, 51.50 per cent iron.....	4.25
High phosphorus iron, 51.50 per cent.....	4.15

Foreign Ore, per Unit, c.i.f. Philadelphia or Baltimore

Iron ore, low phos., copper free, 55 to 58 per cent iron in dry Spanish or Algerian.....	9.50c. to 10c.
Iron ore, Swedish, average 66 per cent iron.....	9.50c.
Manganese ore, washed, 51 per cent manganese, from the Caucasus.....	44c.
Manganese ore, Brazilian or Indian, nominal Tungsten ore, high grade, per unit, in 60 per cent concentrates.....	42c.
Chrome ore, Indian basic, 48 per cent Cr ₂ O ₃ , crude, per ton, c.i.f., Atlantic seaboard....	\$9.00 to \$11.00
Molybdenum ore, 85 per cent concentrates, per lb. of MoS ₃ , New York.....	32.00
	80c.

Coke and Coal

(Per Net Ton)

Furnace coke, f.o.b. Connellsville prompt.....	\$3.00 to \$3.20
Foundry coke, f.o.b. Connellsville prompt.....	4.00 to 4.50
Mine run steam coal, f.o.b. W. Pa. mines.....	1.50 to 2.00
Mine run coking coal, f.o.b. W. Pa. mines.....	1.50 to 1.75
Mine run gas coal, f.o.b. W. Pa. mines.....	2.00 to 2.25
Steam slack, f.o.b. W. Pa. mines.....	1.45 to 1.50
Gas slack, f.o.b. W. Pa. mines.....	1.50 to 1.60

Ferroalloys

Ferromanganese, domestic, 80 per cent, furnace, or seaboard, per ton.....	\$115.00
Ferromanganese, foreign, 80 per cent, f.o.b. Atlantic port, duty paid.....	115.00
Ferrosilicon, 50 per cent, delivered.....	\$82.50 to \$5.00
Ferrosilicon, 75 per cent.....	145.00 to 147.50
Ferrotungsten, per lb. contained metal.....	90c. to 95c.
Ferrochromium, 4 per cent carbon and up, 60 to 70 per cent Cr., per lb. contained Cr. delivered.....	11.50c.
Ferrovanadium, per lb. contained vanadium.....	\$3.50 to \$4.00
Ferrocobaltititanium, 15 to 18 per cent, per net ton.....	200.00

Spiegeleisen, Bessemer Ferrosilicon and Silvery Iron

(Per gross ton furnace unless otherwise stated)

Spiegeleisen, domestic, 19 to 31 per cent.....	\$33.00
Spiegeleisen, domestic, 16 to 19 per cent.....	32.00
Ferrosilicon, Bessemer, 10 per cent; \$35.50; 11 per cent, \$37.50; 12 per cent, \$39.50; electric furnace ferrosilicon, 10 to 14 per cent, \$42; furnace with an advance of \$1 per unit for material above 10 per cent.	
Silvery iron, 6 per cent, \$24; 7 per cent, \$25; 8 per cent, \$26.50; 9 per cent, \$28.50; 10 per cent, \$30.50; 11 per cent, \$32.50; 12 per cent, \$34.50.	

Fluxes and Refractories

Fluorspar, 85 per cent and over calcium fluoride, not over 5 per cent silica, per net ton, f.o.b. Illinois and Kentucky mines.....	18.50
Fluorspar, foreign, 85 per cent calcium fluoride, not over 5 per cent silica, c.i.f. Philadelphia, duty paid, per net ton.....	18.00
Fluorspar, No. 1 ground bulk, 95 to 98 per cent calcium fluoride, not over 2½ per cent silica, per net ton, f.o.b. Illinois and Kentucky mines.....	32.50
Fluorspar, acid lump, 98 per cent plus calcium fluoride, not over 1 per cent silica, per net ton, f.o.b. Illinois and Kentucky mines.....	35.00
Fluorspar, foreign, 85 per cent calcium fluoride, not over 5 per cent silica, c.i.f. Philadelphia, duty paid, per net ton.....	18.00

Per 1000 f.o.b. works:

Fire Clay	High Duty	Moderate Duty
Pennsylvania.....	\$43.00 to \$46.00	\$40.00 to \$43.00
Maryland.....	48.00 to 50.00	43.00 to 45.00
Ohio.....	43.00 to 46.00	40.00 to 42.00
Kentucky.....	43.00 to 45.00	40.00 to 42.00
Illinois.....	43.00 to 45.00	40.00 to 42.00
Missouri.....	45.00 to 48.00	38.00 to 42.00
Ground fire clay, per ton.....		6.50 to 7.50

Silica Brick:

Pennsylvania.....	40.00
Chicago.....	49.00
Birmingham.....	54.00
Silica clay, per ton.....	8.00 to 9.00

Magnesite Brick:

Standard size, per net ton (f.o.b. Baltimore and Chester, Pa.).....	45.00
Grain magnesite, per net ton (f.o.b. Baltimore and Chester, Pa.).....	40.00

Chrome Brick:

Standard size, per net ton.....	48.00
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Bolts and Nuts

(F.o.b. Pittsburgh, Cleveland and Chicago)

Machine bolts, small rolled threads..60 and 10 per cent off list	
Machine bolts, all sizes, cut threads.....	50, 10 and 10 per cent off list
Carriage bolts, smaller and shorter, rolled threads.....	50, 10 and 10 per cent off list
Carriage bolts, cut threads, all sizes.....	50, 10 and 10 per cent off list
Eagle carriage bolts.....	55 and 10 per cent off list
Lag bolts.....	60, 10 and 10 per cent off list
Plow bolts, Nos. 1, 2 and 3 heads.....	50 and 10 per cent off list

Other style heads.....20 per cent extra
Machine bolts, c.p.c. and t. nuts, ¼ x 4 in., 45, 10 and 5 per cent off list

Larger and longer sizes.....45, 10 and 5 per cent off list
Hot-pressed nuts, blank or tapped, square.....4c. off list
Hot-pressed nuts, blank or tapped, hexagons.....4.40c. off list
C.p.c. and t. square or hex. nuts, blank or tapped.....4.10c. off list
Bolt ends with hot pressed nuts.....50, 10 and 10 per cent off list
Bolt ends with cold pressed nuts.....45, 10 and 5 per cent off list
Washers.....6c. to 5.50c. off list
*F.o.b. Chicago and Pittsburgh.

The discount on machine, carriage and lag bolts is 5 per cent less than above for less than car lots. On hot pressed and cold punched nuts the discount is 25c. less per 100 lb than quoted above for less than car lots.

(Quoted with freight allowed within zone limits)

Semi-finished hex. nuts:
¾ in. and smaller, U. S. S.....20, 10 and 5 per cent off list
¾ in. and larger, U. S. S.....75, 10 and 5 per cent off list
Small sizes, S. A. E.....80, 10, 10 and 5 per cent off list
S. A. E., ¾ in. and larger.....75, 10, 10 and 5 per cent off list
Stove bolts in packages.....50 and 5 and 2½ per cent off list
Stove bolts in bulk.....80 and 5 and 2½ per cent off list
Tire bolts.....50, 10 and 5 per cent off list

Semi-Finished Castellated and Slotted Nuts

(Prices delivered within specified territories)

(To jobbers and consumers in large quantities)

Per 100 Net				Per 100 Net			
S. A. E.		U. S. S.		S. A. E.		U. S. S.	
¾-in.	\$0.44	\$0.44		¾-in.	\$2.35	\$2.40	
¾-in. ....	.515	.515		¾-in.	3.60	3.60	
¾-in. ....	.62	.66		1-in.	5.55	5.80	
¾-in. ....	.79	.90		1½-in.	8.90	9.90	
¾-in.	1.01	1.05		1½-in.	12.60	13.10	
¾-in.	1.38	1.43		1½-in.	18.35	18.35	
¾-in.	1.70	1.73		1½-in.	21.00	21.00	

Larger sizes—Prices on application.

Cap and Set Screws

(Freight allowed within zone limits)

Milled cap screws.....	80, 10 and 5 per cent off list
Milled standard set screws, case hardened.....	80 and 10 per cent off list
Milled headless set screws, cut thread.....	80 and 10 per cent off list
Upset hex. head cap screws, U. S. S. thread.....	80, 10, 10 and 5 per cent off list
Upset hex. cap screws, S. A. E. thread.....	80, 10, 10 and 5 per cent off list
Upset set screws.....	80, 10 and 10 per cent off list
Milled studs.....	75 per cent off list

Semi-Finished Steel, f.o.b. Pittsburgh or Youngstown, per gross ton

Rolling billets, 4-in. and over.....	\$35.50
Forging billets, ordinary carbons.....	40.50
Forging billets, guaranteed analysis.....	45.50
Sheet bars.....	27.00
Slabs.....	35.50
*Wire rods, common soft, base, No. 5 to ¼-in.....	46.00
Wire rods, common soft, coarser than ¼-in.....	\$2.50 over base
Wire rods, screw stock.....	\$5.00 per ton over base
Wire rods, carbon 0.30 to 0.40.....	3.00 per ton over base
Wire rods, carbon 0.41 to 0.55.....	5.00 per ton over base
Wire rods, carbon 0.56 to 0.75.....	7.50 per ton over base
Wire rods, carbon over 0.75.....	10.00 per ton over base
Wire rods, acid.....	15.00 per ton over base
Skelp, grooved, per lb.....	2c. to 2.10c.
Skelp, sheared, per lb.....	2c. to 2.10c.
Skelp, universal, per lb.....	2c. to 2.10c.

*Chicago mill base is \$50. Cleveland mill base, \$46.

Alloy Steel

(F.o.b. Pittsburgh or mill)

S. A. E.	Series	Bars
Numbers		100 lb.
2100*	(¼% Nickel, 10 to 20 per cent Carbon)...	\$3.00 to \$3.25
2300	(3¼% Nickel).....	4.50 to 4.75
2500	(5% Nickel).....	6.00 to 6.25
3100	(Nickel Chromium).....	3.50 to 3.65
3200	(Nickel Chromium).....	5.50
3300	(Nickel Chromium).....	7.50 to 7.75
3400	(Nickel Chromium).....	6.50 to 6.75
5100	(Chromium Steel).....	3.50
5200*	(Chromium Steel).....	7.50 to 8.00
6100	(Chromium Vanadium bars).....	4.25 to 4.50
6100	(Chromium Vanadium spring steel).....	4.00 to 4.25
9250	(Silicon Manganese spring steel).....	3.50
Carbon Vanadium (0.45 to 0.55 Carbon, 0.15 Vanadium).....		4.25 to 4.50
Nickel Chrome Vanadium (0.60 Nickel, 0.50 Chromium, 0.15 Vanadium).....		4.50
Chromium Molybdenum bars (0.80—1.10 Chromium, 0.25—0.40 Molybdenum).....		4.35
Chromium Molybdenum bars (0.50—0.70 Chromium, 0.15—0.25 Molybdenum).....		3.75
Chromium Molybdenum spring steel (1—1.25 Chromium, 0.30—0.50 Molybdenum).....		4.75 to 5.00

Above prices are for hot-rolled steel bars, forging quality. The ordinary differential for coal drawn bars is 1c. per lb. higher. For billets 4 x 4 to 10 x 10-in. the price for a gross ton is the net price for bars of the same analysis. For billets under 4 x 4-in. down to and including 2½-in. squares, the price is \$5 a gross ton above the 4 x 4 billet price.

*Not S. A. E. specifications, but numbered by manufacturers to conform to S. A. E. system.

FABRICATED STEEL

Orders for 22,000 Tons and Fresh Inquiries for 16,000 Tons

Bookings of fabricated structural steel, as reported to THE IRON AGE, aggregated 22,000 tons in the past week. Fresh inquiries appeared for 16,000 tons. The weekly average of awards up to date this year has been 32,000 tons in the larger size projects. The week's items are as follows:

Loft building, 245 West Twenty-Seventh Street, New York, 1000 tons, to an unnamed fabricator.

Crocker, Burbank & Co., Fitchburg, Mass., 1000 tons, to Lehigh Structural Steel Co.

Bath, N. Y., transmission towers, 300 tons, to Lehigh Structural Steel Co.

Boys Catholic high school, Philadelphia, 1000 tons, to McClintic-Marshall Co.

Standard Oil Co., three tanks, 1100 tons, to American Bridge Co.

New York Evening Post building, steel caissons, 600 tons, to American Bridge Co.

Loft building, Fourth Avenue and Thirty-First Street, New York, 1800 tons, to Heddon Iron Construction Co.

Telephone exchange addition, Springfield, Mass., 200 tons, to Palmer Steel Co.

Louisville & Nashville Railroad, bridge at Knoxville, Tenn., 1200 tons, to American Bridge Co.

Indiana State Highway Commission, bridge at Rogers, Ind., 500 tons, to Vincennes Bridge Co.

Summit Street bridge, Dayton, Ohio, 250 tons, E. S. Smith Co., low bidder.

Upton Nut Co., Cleveland, 425 tons, to Jones & Laughlin Steel Corporation.

Sherman Building, Des Moines, Iowa, 350 tons, to Pittsburgh-Des Moines Steel Co.

High school, Creston, Iowa, 187 tons, to Pittsburgh-Des Moines Steel Co.

University of Notre Dame, South Bend, Ind., gymnasium and grandstand framing, 175 tons, to Hansell-Elcock Co.

Galesville bridge, Galesville, Wis., 174 tons, to Illinois Steel Bridge Co.

Bridge No. 975 over Skunk River, Cambridge, Iowa, 143 tons, to American Bridge Co.

Church of St. Thomas, Minneapolis, auditorium and school, 119 tons, to American Bridge Co.

Louisiana Railway & Navigation Co., Shreveport, La., deck plate girder span, Brandon, La., 108 tons, to Virginia Bridge & Iron Co.

St. Louis Southwestern Railroad, six 55,000-bbl. oil storage tanks, near Eldorado, Ark., 1000 tons, to Chicago Bridge & Iron Works.

Magnolia Petroleum Corporation, seven 55,000-bbl. oil storage tanks, near Eldorado, Ark., 1200 tons, to unnamed fabricator.

Bridge, Stockton, Cal., 400 tons, to Minneapolis Steel Machinery Co.

Bridges in Alabama, 200 tons, to Stupp Brothers Bridge & Iron Co.

Louisiana Oil & Refining Co., Shreveport, La., miscellaneous construction work, 100 tons, to unnamed fabricator.

Pacific Telephone & Telegraph Co. building, San Diego, Cal., 500 tons, to McClintic-Marshall Co.

Pacific Gas & Electric Co. warehouse, Emeryville, Cal., 100 tons, to Herrick Iron Works.

Department store, Thirteenth and Washington Streets, Oakland, Cal., 170 tons, to California Steel Co.

Associated Oil Co., Tacoma, Wash., one 55,000-bbl. tank, 200 tons, to Western Pipe & Steel Co.

Loft building, West Thirty-ninth Street, New York, 1500 tons, to Hay Foundry & Iron Works.

Apartment house, 100 West Fifty-fifth Street, New York, 900 tons, to Easton Structural Steel Co.

Northwestern University, Chicago, Ward Memorial Building, 3200 tons, to Hansell-Elcock Co.

United States Naval Training Station, Great Lakes, Ill., bridge, 250 tons, to Milwaukee Bridge Co.

Dold Packing Co., Wichita, Kan., 350 tons, to Kansas City Structural Steel Co.

Michigan Central Railroad, bridge work, 1120 tons, divided between American Bridge Co. and Bethlehem Steel Co.

Structural Projects Pending

Inquiries for fabricated steel work include the following:

Maine Central railroad, two bridges, 400 tons.
Brisbane apartment hotel, Park Avenue and Fifty-Seventh Street, New York, 4000 tons.

Power house, Trinidad, Tex., 2000 tons.
Chalmers Petroleum Co., New Orleans, oil storage tanks, 600 tons.

Bridge over Rio Grande River, New Mexico, 300 tons.
Standard Pipe Line Co., Eldorado, Ark., tanks, 300 tons.
Baton Rouge, church, 200 tons.

Avalon Theater, Chicago, 300 tons.
Menasha, Wis., bascule bridge at Tayco Street, 150 tons.
A. E. McMahon, city engineer, preparing plans, estimated cost, \$100,000.

Merced Irrigation District, Merced, Cal., spillway gates, 200 tons.

Union Tank Car Co., Hammond, Ind., 250 tons.
Detroit, Eagle Avenue grade elimination, 1300 tons.
Skouras Brothers Ambassador Theater, St. Louis, 5500 tons, Rapp & Rapp, Chicago, architects.

RAILROAD EQUIPMENT

Orders for 13 Locomotives—Car Purchases Call for Little Steel

Of the cars ordered in the past week, 800 were for mine use, 150 for sugar cane and 300 were refrigerator cars. Thus the steel requirements are not large. Orders were placed for 13 locomotives. Among the items were:

The Norfolk & Western has asked for prices on the rebuilding of 1935 all-steel 57½-ton hopper cars.

The Pittsburgh Coal Co. has closed on 700 mine cars with the American Car & Foundry Co.

The South Penn Collieries Co. has purchased 100 mine cars from the American Car & Foundry Co.

The Delaware, Lackawanna & Western has awarded 300 refrigerator cars to the American Car & Foundry Co.

The Black Servant Coal Co. has purchased 12 side dump cars from the American Car & Foundry Co.

The American Steel & Wire Co. has placed 10 extension side dump cars with the Clark Car Co.

The Woodward Iron Co. has purchased 5 extension side dump cars from the Clark Car Co.

The Chile Exploration Co. has purchased 2 10,000-gal. tank cars from the General American Tank Car Corporation, for export.

The American Gas & Electric Co. has closed on 4 extension side dump cars with the Clark Car Co.

The Chinese Government Railways have inquired from car builders for 80 40-ton steel box cars.

E. Atkins & Co., Cuba, have closed on 150 cane cars, 30 tons capacity, with the American Car & Foundry Co.

The Newburgh & South Shore Railway, Cleveland, has purchased one 10-wheel and one 6-wheel switching locomotives from the Baldwin Locomotive Works.

The New York, Chicago & St. Louis, Cleveland, has purchased 10 8-wheel switching locomotives from the Lima Locomotive Works.

The Bear Creek Logging Co. has ordered a Mikado type locomotive from the Baldwin Locomotive Works.

The New York Central is in the market for 26 locomotive tenders, capacity 15,000 gal.

The Illinois Traction ordered 50 hopper cars from the Mount Vernon Car Mfg. Co.

The Missouri-Kansas-Texas has indefinitely postponed action on its inquiry for 1800 freight cars.

The Southern Pacific has ordered 10 coaches from the Pullman Car & Mfg. Corporation, 6 baggage and mail cars from the Standard Steel Car Co. and 5 baggage cars from the Bethlehem Steel Co.

Named for the vice-president of the Illinois Steel Co., the steamer T. W. Robinson, which is being built for the Bradley Transportation Co. of Rogers City, Mich., a subsidiary of the United States Steel Corporation, was launched at the Lorain yard of the American Shipbuilding Co., April 26. This is a self unloading vessel, 586 ft. long and will be used for hauling limestone. An unusual feature of this boat is that it will be propelled electrically, a large turbine generator being provided to supply the necessary current. In addition, all the conveyor and other equipment on the boat will be electrically operated.

PERSONAL

Fred E. Mesta, who has been vice-president and general superintendent Mesta Machine Co., West Homestead, Pa., has been elected president and general manager, to succeed his brother, the late George Mesta.



FRED E. MESTA

H. F. Wahr, formerly secretary, was elected vice-president. J. O. Horning, treasurer of the company since its inception, will continue in that office, and G. E. Townsend, formerly assistant secretary, becomes secretary. The directors of the company are: F. E. Mesta, J. O. Horning, H. F. Wahr, W. J. Hirth and G. E. Townsend. Mr. Mesta received his early education in the public schools of Bethel Township, Pa., his birthplace, and was graduated from the High School of Leechburg, Pa. His practical experience in the iron and steel business was obtained in the plant of the Leechburg Foundry & Machine Co., Leechburg. Later he took up engineering and went into the engineering department of the Leechburg Foundry & Machine Co., afterwards going on the road as selling representative of the company, besides having charge of its outside erecting work. In 1898 he took charge of the construction of the present plant of the Mesta Machine Co. at West Homestead, and was made general superintendent when the plant was put into operation. In April, 1912, he was elected a director and vice-president of the company, in charge of operations.

Dr. Wilder D. Bancroft, professor of chemistry, Cornell University, Ithaca, N. Y., was made an honorary member of the American Electrochemical Society at its spring meeting at Niagara Falls, April 23 to 25.

George M. Baker, for the past 18 years associated with the General Electric Co., much of that time in the company's Pittsburgh district sales office, has resigned to go into a manufacturing business in Schenectady. He is a graduate of Lehigh University, president of the Pittsburgh Lehigh Club, and has been active in engineering societies in Pittsburgh.

Wallace A. Stuart, who has been attached to the Pittsburgh district sales office, General Refractories Co., for the past year, has been transferred to the company's Cleveland office. Arthur A. Wedderspoon, who has been in the New York and Cleveland offices, has been transferred to the Pittsburgh office.

L. W. Wallace, executive secretary of the American Engineering Council, spoke before the Cleveland Chamber of Commerce at a noonday meeting, May 5. His subject was "How May American Industry Maintain Its Position in World Trade?"

J. W. Hargate has been appointed purchasing agent of the National Enameling & Stamping Co., Granite City, Ill. He was connected with the Scullin Steel Co., St. Louis, for 18 years, the last five as purchasing agent. He has been in business for himself for the last three years.

C. H. Martin, formerly with the Peoples Light, Gas & Coke Co., Detroit, will be district representative in Wisconsin and Illinois for Holcroft & Co., contracting engineers, Detroit.

R. Duncan Morris, for several years general manager of sales, Spang, Chalfant & Co., Pittsburgh, has become associated with the Wheeling Steel Corporation, for which he will handle standard pipe sales.

H. Grubb has been elected president of the Du Pont Everdur Co., formed to manufacture the metal alloy known as Everdur No. 50, heretofore handled by the Du Pont Engineering Co., Wilmington, Del. H. M. Pierce is vice-president; J. B. Eliason, treasurer; Charles Copeland, secretary, and M. D. Fisher, assistant secretary. Directors are: R. R. M. Carpenter, chairman; William Coyne, H. Grubb, H. M. Pierce and Charles B. Jacobs.

Prof. W. Chattin Wetherill of the Towne Scientific School, University of Pennsylvania, has been granted a two-year leave of absence to do special work in the division of simplified practice of the Department of Commerce. His work will be in connection with the metal industry subdivision.

A. P. Cobb, vice-president New Jersey Zinc Co., New York, was elected president of the American Zinc Institute for the coming year at the annual meeting in St. Louis last week. Mr. Cobb has been prominent in the affairs of the Zinc Institute since its formation, having filled until the recent election the position of vice-president and chairman of the executive committee.

Earl E. Miller has been appointed manager for the Sullivan Machinery Co., Chicago, at its El Paso, Tex., branch, succeeding R. S. Weiner, who was transferred to the general office. Mr. Miller's experience covers more than 13 years with the company, at its offices at Denver, Lima, Peru, and Paris, France.

Elmer A. Sperry, president of the Sperry Gyroscope Co., Brooklyn, N. Y., and Ralph Modjeski, 28 East Jackson Boulevard, Chicago, consulting civil engineer, have been elected members of the National Academy of Sciences. Mr. Sperry and Mr. Modjeski will become affiliated with the engineering section, increasing the membership of that section to 17.

George K. Tinker, who was district sales manager for the LaBelle Iron Works in the New England territory, with headquarters in Boston since 1908, also sales manager for the Wheeling Steel Corporation, successor to LaBelle Iron Works, has resigned to go into business for himself as manufacturers' agent in steel and plumbing supply products with headquarters in Boston.

W. F. Barrett received the honorary degree of doctor of science from the University of Pittsburgh at the recent Charter Day Exercises, in recognition of his achievements in the production and commercialization of industrial gases.

A graduate of Sheffield Scientific School, Yale University, Mr. Barrett spent ten years with the Peoples Gas Light & Coke Co., Chicago, becoming assistant general superintendent and assistant chief engineer. Since 1913 he has been with the Linde Air Products Co., first as works manager and chief engineer. He is now vice-president and director of that company, president of the Dominion Oxygen Co., Ltd., vice-president and director of the Prest-O-Lite Co., Inc.,



W. F. BARRETT

and a director of the National Carbon Co., Inc., all being affiliated together in the Union Carbide & Carbon Corporation. He is also vice-president of both the

Union Carbide and Carbon Research Laboratories and the Carbide & Carbon Chemical Corporation.

Henry Vache has been appointed resident manager of the new Philadelphia office at 2119 Land Title Building, for the Lancaster Iron Works, Lancaster, Pa. C. H. Hodges is in charge of the Baltimore office at 508-A American Building. Other new branch offices are as follows: Duncan A. MacLeod and C. F. Larsen, Ellicott Square Building, Buffalo; Arthur H. Blake, 10 High Street, Room 319, Boston; H. E. Snyder, care of Belcher Asphalt & Paving Co., Miami, Fla.

J. Kent Smith, the well-known Sheffield metallurgist, arrived in the United States from England last week with his family and will take up his residence at Detroit. He will shortly open an office there for consulting work. Mr. Smith has been engaged for many years in experiment and research in special steels. He will be remembered as a resident of the United States for several years in the early 1900's and during that time was instrumental in introducing vanadium as a commercial steel element. He has written with authority in recent years on stainless steel and rustless



J. KENT SMITH

iron and his technical contributions in the past year or two have dealt particularly with nitrides in steel and the effects of some of their variants. Mr. Smith is known in Sheffield especially for his work on "body" in iron. He was granted a decoration by the king for his wartime research in cupronickel.

Robert A. Bachman, for 18 years vice-president and general manager of the Thomas A. Edison Co. Labora-

tories, Edison Storage Battery Co. and Edison Chemical Works, West Orange and Silver Lake, N. J., has been appointed manager of the Blair Tool & Machine Corporation, New York, recently reorganized on account of the death of Mr. Potter, the former owner. James E. Engle, for 18 years in charge of the production and jobbing department of Garvin Machine Co., will be chief engineer in charge of production and William J. Grauer, 16 years in charge of various departments of R. Hoe & Co., becomes superintendent.

G. A. Pabst, who has been connected with the machine tool industry for many years, devoting most of his time to the internal grinding field, has joined the Giddings & Lewis Machine Tool Co., Fond du Lac, Wis., as special representative in the sale of G & L Grinders in the United States and Canada. He will have headquarters in Chicago.

W. B. Huntley has been appointed district sales manager in Buffalo territory, with offices at 731 Marine Trust Building, Buffalo, for the Union Drawn Steel Co., Beaver Falls, Pa.

Gardner Osborn, formerly with Barton, Durstin & Osborn, has become connected with the Carl Reimers Co., Inc., as vice-president and director. The corporate name is changed to Reimers & Osborn, Inc., 1819 Broadway at Columbus Circle, New York.

Howard Kitts, experimental engineer International Business Machine Corporation, Endicott, N. Y., has been transferred to a similar position in that company's laboratory in New York.

Harold L. Stevens has resigned as general manager of sales of the Central Iron & Steel Co., Harrisburg, Pa. He was associated with the company two and one-half years, prior to which he was with the Lackawanna Steel Co. for 14 years in charge of sales in the Buffalo and New England districts.

OBITUARY

Major William H. Wiley

MAJOR WILLIAM HALSTED WILEY, publisher of scientific works for nearly 50 years, died May 2 at his home in East Orange, N. J., in his eighty-third year. He was treasurer of the American Society of Mechanical Engineers, and from 1903 to 1907 and 1909 to 1911 had represented the Eighth New Jersey District in Congress. He was born in New York. In 1861 he graduated from the College of the City of New York, but his studies were suspended until after the Civil War, during which he rose to the command of two companies of artillery, being brevetted major for gallant service upon retirement. He resumed his studies in 1866 and received an engineer's degree from Rensselaer Polytechnic Institute. This was followed by a year of special work in the Columbia School of Mines.

Major Wiley began his business career in 1876 with John Wiley & Sons, Inc., publisher of scientific books, established in 1807 by his grandfather, Charles Wiley. That company published *Kent's Mechanical Engineers Handbook* and numerous other important works.

DR. CHARLES W. BURROWS, noted as a pioneer and authority in the magnetic analysis of steel, died May 2.

JAMES H. RIDDLE, aged 64, president Spears & Riddle Co., Wheeling, W. Va., and one of the oldest manufacturers in the city, died April 28 at Newport, Fla., where he had been spending the winter.

FRANK TRANSUE, founder of the Transue-Williams Steel Forging Corporation, Alliance, Ohio, died at his home in that city May 1, in his eighty-third year. He was a principal factor in the development of the com-

pany. Mr. Transue was chairman of the board of directors of the First National Bank of Alliance.

CHARLES P. WETMORE, noted inventor of labor-saving devices for machine shops, died at his home in Milwaukee on April 28. He was 62 years of age and a native of Roxbury, Conn.

WALTER S. HAGAMAN, who for over 25 years was associated with the W. E. Shipley Machinery Co., Philadelphia, died May 1, in St. Charles Hospital, St. Charles, Ill. Mr. Hagaman became associated with Mr. Shipley in 1898, laying the foundation of the business. Failing health compelled him to retire in August, 1922.

HOWARD K. SHOOK, aged 33, superintendent of strip mills, Trumbull Steel Co., Warren, Ohio, died April 30 from complications after an illness of less than a week.

HOWARD S. WHITE of Waterbury, Conn., and Mrs. White were instantly killed in an automobile accident in Italy, while en route to San Remo, on May 2. Mr. White was president and superintendent of the Homer D. Bronson Co., Beacon Falls, Conn., which has one of the largest plants of its kind in Connecticut, manufacturing metal goods and various hardware articles. He was born at Bridgeport, Conn., in 1880.

CHARLES R. HUGHES, manager Pacific Sheet Steel Corporation, died on April 28 at San Francisco, following an operation. Mr. Hughes had served as manager since the company began and it was under his supervision that the rolling mills at South San Francisco were erected and put into operation. For about 20 years before this Mr. Hughes was connected with the American Rolling Mills Co. at Middletown, Ohio, where, starting as a hot mill worker, he rose to the position of sheet mill superintendent and finally became production supervisor.

European Markets Continue Quiet

Tin Plate Stabilization Scheme in England Appears Dead—In Germany the 8-Hr. Day Is Again a Factor—Less Unemployment

(By Cablegram)

LONDON, ENGLAND, May 4.

Pig iron is quietly steady, without material improvement in demand. Scotland is buying more Cleveland iron, but export sales are still poor, although inquiry is broadening. Hematite is steady, with improved demand from both domestic and export consumers, but actual sales are still in only moderate volume.

Foreign ore is dull. There is some inquiry for second-half shipments, but no business is passing. Bilbao Rubio is held nominally at 22s. (\$5.36) c.i.f. Tees.

Finished iron and steel markets are very dull, both domestic and export. The withdrawal of fixed domestic trade prices for steel products has not attracted consumers to buy in any volume.

Sheets and Tin Plate

In the tin plate market the stabilization scheme probably will be abandoned tomorrow. The leading groups, including Richard Thomas & Co., Ltd., Swansea, Wales, notified [the stabilization committee] of their secession, last Thursday, and the market since then has been uncontrolled. W. Gilbertson & Co., Ltd., Glamorgan, Wales, have been appealing for a fresh attempt at concerted action and meeting in Swansea on Tuesday, but it is considered that an accord is unlikely, there being too many dissentients. The market is very unsettled and prices, naturally, have dropped considerably, but a recovery is anticipated when the position becomes more settled. Sellers have gone freely down to 21s. (\$5.08) basis IC, f.o.b. and 28 x 20's have been sold at 20s. 9d. (\$5.02) basis, f.o.b.

Galvanized sheets are steady, with small general

business moving and substantial demand still lacking.

Black sheets are quiet. Japanese 6 x 3 ft., 13's, 107 lb., are being sold at £15 (3.24c. per lb.) f.o.b., but no large quantities are changing hands.

On the Continent of Europe

Continental markets are steady, with moderate sales of small parcels—mostly semi-finished steel—to consumers here. Export demand remains poor.

GERMAN MARKET QUIET

Export Trade Generally Dull—Stahlwerksverband Revived for Certain Materials

(By Radiogram)

BERLIN, GERMANY, May 4.—Iron and steel markets generally are quiet. The raw steel syndicate has prolonged to the end of May its general reduction of output of 15 per cent from quotas, with the exception of semi-finished material and thin sheets, which are not subject to the reduction. The export market is dull, except for wire rods.

Pig iron prices are unchanged. The scrap market is firm, with prices per metric ton of 79 gold marks for solid scrap (\$19.12 per gross ton) and 81 marks (\$19.60) for steel scrap.

The Stahlwerksverband has been revived for handling semi-finished steel, structural forms and railroad materials. When fully organized the Verband will conduct selling on behalf of all its members.

British and Continental European prices per gross ton, except where otherwise stated, f.o.b. makers' works, with American equivalent figured at \$4.84 per £1, as follows:

Durham coke, del'd..	£1 2s.	\$5.32
Bilbao Rubio ore†...	1 2½	5.45
Cleveland No. 1 fdy...	4 2	19.84
Cleveland No. 3 fdy...	3 17	18.63
Cleveland No. 4 fdy...	3 16	18.39
Cleveland No. 4 forge	3 15	18.15
Cleveland basic.....	3 15½	18.27
East Coast mixed.....	4 2	19.84
East Coast hematite...	4 19	to £5 0s. 23.96 to \$24.20
Ferromanganese	15 0	to 15 10 72.60 to 75.02
*Ferromanganese	15 0	to 15 10 72.60 to 75.02
Rails, 60 lb. and up...	8 10	to 9 0 41.14 to 43.56
Billets	7 0	to 8 0 33.88 to 38.72
Sheet and tin plate bars, Welsh	7 17½	38.12
Tin plates, base box...	1 0½	to 1 1½ 5.05 to 5.14
Ship plates	8 15	to 9 5 1.89 to 2.00
Boiler plates	12 10	to 13 0 2.70 to 2.81
Tees	8 12½	to 9 2½ 1.86 to 1.97
Channels	7 17½	to 8 7½ 1.70 to 1.81
Beams	7 12½	to 8 2½ 1.65 to 1.75
Round bars, ¾ to 3 in.	9 0	to 9 10 1.94 to 2.05
Galv. sheets, 24 gage	16 10	to 16 12½ 3.57 to 3.59
Black sheets, 24 gage	11 10	2.48
Black sheets, Japanese specifications	15 5	3.30
Steel hoops	10 15	and 12 10* 2.33 and 2.70*
Cold rolled steel strip, 20 gage	16 0	3.46

*Export price.

†Ex-ship, Tees, nominal.

Continental Prices, All F. O. B. Channel Ports

Foundry pig iron:(a)		
Belgium	£3 16s.	\$18.15
France	3 15	18.15
Luxemburg	3 15	18.15
Basic pig iron:(a)		
Belgium	3 14	17.91
France	3 14	17.91
Luxemburg	3 14	17.91
Billets:		
Belgium	5 5	25.41
France	5 5	25.41
Merchant bars:		C. per Lb.
Belgium	5 12½	1.22
Luxemburg	5 12½	1.22
France	5 12½	1.22
Joists (beams)		
Belgium	5 8	1.17
Luxemburg	5 8	1.17
France	5 8	1.17
Angles:		
Belgium	5 18½	to £6 0s. 1.28 to 1.30
½-in. plates:		
Belgium	6 17½	1.49
Germany	6 17½	1.49
¾-in. ship plates:		
Luxemburg	6 17½	1.49
Belgium	6 17½	1.49

(a) Nominal.

GERMAN IRON AND STEEL

Quiet Market—Less Unemployment—Active Foreign Competition

BERLIN, GERMANY, April 21.—The presidential election has retarded progress with the three great problems facing the Luther cabinet: financial reform, the tariff, and the revaluation of public debts. Dr. Luther's proposed amendment of taxation is being sharply attacked by the Social-Democrats and their Left allies as unsocial. The Federal Economical Council has declared that an increase of taxation is not necessary; and this view seems confirmed by the Finance Ministry's return for the financial year 1924-25, which ended on March 31. The yield of all taxes was 7311 million marks, or 2000 million more than the 5243 million marks shown in the estimates presented a year ago. The tax objected to by almost all parties is the turnover tax (*Umsatzsteuer*) which, though reduced during the financial year from 2½ to 1½ per cent, yielded 1900 millions, coming close after the income tax with 2200 millions.

Business circles clamor for a reduction of railroad rates; but the new Railroad Corporation is obliged to go slowly in this matter, being compelled to earn at least sufficient profits to cover interest on its reparations bonds. The Corporation this week reduced by 30 to 35 per cent the rates for iron and steel consigned to shipyards, and also reduced the rates for coal and coke consigned to the Siegerland iron and steel industry, which is financially in a difficult position. Of the demanded all-around cut in rates there is no sign.

8-Hr. Day Again an Issue

Unemployment continues to decrease; on March 31 the number of publicly-supported unemployed was 467,000. The highest number of the past winter (593,000) was reached at the end of February. The Ministry of Labor has begun negotiations with representatives of employers and employees in the iron and steel branches, with the aim of regulating working hours. The compulsory reduction to 8 hr., foreshadowed in the Luther cabinet's first decree, is strongly opposed by the employers. Director Springorum of the Hoesch Iron & Steel Co. declares that losses from the reintroduction of the 8-hr. day (and the accompanying restoration of the pre-war three-shifts-per-day system) exceeded the amount of the company's profits in the best pre-war years. Present indications nevertheless are that the 8-hr. limitation will be legislatively restored.

No final agreement has yet been reached between the German and French negotiators in the issues arising out of the commercial treaty conference at Paris. The Germans maintain their offer to take annually a fixed quantity of French iron, without committing themselves in the matter of the customs tariff.

Competition Active

The question of competition with England has become acute. Germany's exports, as compared with 1913, have shrunk more than England's, and heavy iron and steel is being sold by France and Belgium cheaper than by either Germany or England. It seems certain, however, that in engineering products and in shipbuilding Germany can undersell England; and that the heavy decline in Germany's exports is due, as regards some goods, to reduced productive capacity and, as regards

others, to the exclusionist measures of ally countries.

A vital factor in German cheap production is the extinction of pre-war mortgage and bond debts. The balance sheets for Dec. 31 last of 10 leading shipyards show that of pre-war debts of these two classes totaling 33,550,000 marks only 2,350,000 marks remain, while other debts declined from 228,830,000 marks to 81,070,000 marks. This liberation from debt is all the more effective because, in the intervening 10 years, plant was extended and building capacity increased.

Negotiations for a Bars Syndicate are under way, on the basis that home and export selling shall be left to the member concerns, but that in both cases the prices fixed by the syndicate shall be adhered to, under penalty of fine. It is proposed to entrust the administration of the syndicate to the *Stahlwerksverband*, which is to be revived.

The Pig Iron Syndicate reports satisfactory business at home, and a quiet export market. The syndicate has decided to make no change in prices. The scrap iron market has weakened, owing to the fact that consumers already have covered their demands for some months ahead. Prices have fallen slightly to: steel scrap, 77 marks per metric ton (\$18.63 per gross ton); solid scrap, 75 marks (\$18.15); turnings for Martin (open-hearth) works, 61 marks (\$14.76); cast iron scrap, 81 to 83 marks (\$19.60 to \$20.09). French scrap, a limited export of which has been permitted by the Paris Government, has not been imported into Germany. The steel works and rolling mills report a new improvement in business, and have orders for some months to come. Prices have changed very little, and are, in marks per metric ton, with American equivalents:

		Per Gross Ton
Blooms	112½	\$27.22
Billets	120	29.04
Slabs	125	30.25
Wire rods	145 to 150	\$35.09 to 36.30
		Per Lb.
Bars	136	1.47c.
Construction forms ..	132	1.43c.
Bands	162½ to 165	1.76c. to 1.78c.
Thick sheets (over 5 mm. or No. 6½ gage)	145	1.57c.
Medium sheets (3 to 5 mm.)	170	1.84c.
Thin sheets (1 to 3 mm. or No. 19½ to No. 11½ gage) ..	200	2.16c.
Thin sheets (under 1 mm.)	215	2.32c.

Prices of German pig iron during the war have been published. For foundry iron No. 3 they are compared below with the maximum and minimum pre-war prices, and the prices of the post-war years.

Average Price for the Year	Marks Per Metric Ton	Per Gross Ton
1900 (high point)	97.30	\$23.55
1909 (low point)	57.70	13.96
1913 (last pre-war)	74.50	18.03
1914	70.05	16.95
1915	68.80	16.65
1916	69.04	16.71
1917	79.90	19.84
1918	101.62	24.59
1919	118.46	28.67
1920	124.01	30.91
1921	83.37	20.18
1922	74.32	17.99
1923	106.43	25.76
1924	92.65	22.42

These are prices ex-works. The price drop of 1921-22 was due to the currency depreciation, which entailed an all-around low price level. The average price for South Germany in 1924 was 89.65 marks (\$21.62). Since the beginning of 1924 the Pig Iron Syndicate has fixed lower prices for South German centers, in view of their unfavorable geographical position.

BELGIAN PRICES UNSETTLED

Some Works May Reduce Production—Wage Question Serious

ANTWERP, BELGIUM, April 8.—In general prices have not changed during this last fortnight. Business done is certainly not great and a large number of buyers already are pushing decidedly for lower prices. Fortunately most makers still are provided with orders so that they, in most cases, could maintain their posi-

tion. In consequence many of them abstain from quoting. Prices are actually sufficiently low and much too near cost, if not under, and consequently works cannot accept further reductions. That is why makers now have decided, if this situation goes on, that they will have to reduce production. In fact, prices offered are not interesting for them, especially as they have not obtained a reduction of wages. This question is still far from decided. Employers in a certain district published a reduction of 5 and 10 per cent. Workmen, not at all inclined to accept, replied in certain works with a notice for strike for April 15. Taking into considera-

tion the results of last Sunday's elections, it is to be feared that makers will have to start effectively with the general lockout in the whole district of Hainaut, with which makers answered to the notice of partial strikes. [This was averted by a compromise.]

On the other hand Luxemburg works are in want of orders and reappear on our market with somewhat lower quotations. French makers are favored as regards the export business by the momentarily lower value of the French franc.

Steel Prices Weaker

The steel market especially seems to adopt a waiting position. Although works resist in most cases the efforts made for lower prices, it is certain that prices do not keep so firm. Makers seriously think of reducing production. Only a limited business is available, so that a slight straightening of prices may eventually be obtained by the reduction of the supply. In the meantime different makers have retired out of the market, part of them having still sufficient orders before them, others alleging too low prices.

Bars were offered by Luxemburg makers at prices as low as £5 14s., or 1.22c. per lb. basis price. Only a few Belgian works would have come as low as this quotation. This, however, did not prevent prices for bars from showing slightly weaker. For export business beams were quoted from \$25.80 to \$26.50, according to section, these prices indicating also a semblance of giving way. Germans remain on the market for wire rods at better prices than we can do. For domestic sales beams were sold at about 530 fr., or 1.20c. per lb., while bars were quoted up to 550 fr., equalling 1.23c. Hoops were in good demand from abroad, while corrugated bars also were booked for foreign destinations. Approximate prices per ton f.o.b. Antwerp ran as follows:

	Fr.	Per Lb.
Rails	600 or \$30.10	
Wire rods	650 or 32.60	
Bars, basis	545 or 27.25	(1.22c.)
Beams	515 or 26.50	(1.18c.)
Rods	640 or 32.55	(1.45c.)
Corrugated bars	605 or 30.50	(1.36c.)
Steel hoops	750 or 37.60	(1.68c.)
Cold rolled steel hoops	1,080 or 54.00	(2.41c.)
Drawn steel squares	925 or 46.50	(2.08c.)
Rounds	900 or 45.30	(2.02c.)
Hexagons	1,000 or 50.35	(2.25c.)
Spring steel	1,025 or 51.30	(2.29c.)

Sheets.—The prices have remained the same. The situation is nearly satisfactory. Makers are well provided with orders, especially for heavy material. Reduction of prices may eventually be accepted for thinner sheets, as the works are looking for orders. The price of £7, or 33.50c. per lb., for the 5-mm. sheets and thicker, with £7 12s. 6d., or \$36.50 for ¼ in., have been easily maintained. Approximate prices are:

	Fr.	Per Lb.
Thomas sheets 0.5 mm. (No. 25½ gage) ..	1,125 or \$56.60	(2.53c.)
Thomas sheets 1 mm. (No. 19½ gage) ..	985 or 49.50	(2.21c.)
Thomas sheets 2 mm. (No. 14 gage) ..	820 or 41.10	(1.83c.)
Thomas sheets 3 mm. (No. 11½ gage) ..	730 or 36.55	(1.63c.)
Thomas sheets 5 mm. (No. 6½ gage) ..	665 or 33.50	(1.50c.)
Galvanized sheets 0.5 mm.	2,200 or 110.50	(4.93c.)
Galvanized sheets 1 mm.	1,675 or 84.00	(3.75c.)
Polished sheets average price	1,500 or 75.40	(3.37c.)

Iron.—No movement appears in this market. Makers' position remains as bad as before. Scrap remains dear and nearly no demand exists. The price accepted for foreign business is as low as \$28.75. Nominal prices are:

	Fr.
Commercial iron No. 2	580 or \$29.15
Commercial iron No. 3	590 or 29.60
Commercial iron No. 4	600 or 30.10

Semi-Finished Material.—Offers from abroad continue to be too low to interest Belgian makers. As however domestic consumption is sufficient, almost no material is available. Lorraine makers are not on the market, so that even without real business this market still shows good firmness. English buyers offer prices as low as \$24.70 for billets and \$25.50 for targets, when ruling prices in Belgium, with Lorraine and Luxemburg prices nearly the same, are:

	Fr.
Thomas billets	505 or \$26.00
Thomas blooms	490 or 24.55
Thomas targets	510 or 25.60

Pig Iron.—Prices for No. 3 phosphoric pig iron went last week up to 365 fr., either free consumers' works

or f.o.b. Antwerp, this meaning \$18.10. Notwithstanding important demand and the firmness of the market, prices have dropped about 5 fr. (25c.) since last week. Luxemburg makers quote the same. Lorraine makers abstain mostly from quoting, having momentarily better outlets in Italy. French semi-phosphorus pig iron, also French hematite, are offered on our market at low prices, owing to the low exchange rate of the French franc. Such prices are in some cases even lower than the low prices already accepted for hematite pig iron by Belgian makers. English hematite, therefore, although also very cheap, cannot be sold easily. Its price, now as low as 88s., c.i.f. Antwerp, turns out to 418 fr. (\$21) which is higher than the Belgian price, which generally was 420 to 425 fr., delivered consumers' works, also f.o.b. Antwerp.

GERMAN TRADE BALANCE

Iron and Steel Exports Exceed Imports—Shrinkage from Pre-War Values

BERLIN, GERMANY, April 21.—The iron trade balance greatly improved in February. Imports of iron and steel wares thereof, excluding machinery, totaled only 78,316 metric tons against exports of 241,445 tons. Chief figures were:

	Metric Tons	
February, 1925	Imports	Exports
Pig iron	7,099	11,233
Scrap	30,621	19,376
Ingots, billets, etc.	6,572	4,394
Bars, forms, bands	18,577	30,583
Sheets	4,785	27,986
Wire	3,529	31,862
Rails, ties, etc.	1,845	31,923
Agricultural tools	49	4,045

Machinery imports were 2194 tons; exports 24,266 tons. The following table shows export trade values in the chief metal branches in 1924 as compared with 1913. The decline in quantity of exports is naturally considerably greater than the decline in values, owing to the rise in prices in the last 11 years:

	1913	1924
	Thousands of Gold Marks	
Iron and steel, iron ore and all iron and steel wares other than machinery and electrical plant	1,412,970	844,520
Whereof:		
Semi-finished material	65,270	5,450
Bars and structural forms ..	204,630	38,230
Sheets and wire	179,000	92,050
Railroad permanent way material	80,400	14,270
Cutlery	38,330	48,230
Machinery	608,150	416,740
Whereof:		
Locomotives and tenders ..	55,220	20,110
Sewing machines	47,160	43,260
Textile machines	60,430	64,270
Far machines	34,980	20,180
Explosion motors	35,620	21,490
Electrical wares	290,250	259,160

The comparative trade balance for the combined iron, iron wares, machinery, electrical and non-ferrous metals branches was:

	Thousands of Gold Marks		
	Imports	Exports	Export Surplus
1913	1,144,350	2,749,870	1,605,520
1924	686,980	1,809,500	1,122,520

Russian Iron and Steel

Figures issued by the Russian Information Bureau, Washington, showing the production of iron and steel in Soviet Russia in the first and second quarters of the current fiscal year, which began Oct. 1, 1924, indicate an increase in the second quarter in all of the three items listed, both as compared with the first quarter and with the second quarter of the preceding fiscal year. Translating the figures from the report, which gives them in poods, the production was as follows:

	Quarter Ended	
	Dec. 31, 1924	March 31, 1925
Gross Tons		
Pig iron	225,000	273,200
Steel ingots	335,700	432,900
Rolled steel	263,600	300,100

The Oswego, N. Y., shop of the New York Central Railroad has resumed operations in its car repair department on a five day per week basis.

DISTRIBUTION OF EXPORTS

Canada Took 199,462 Tons of Nine Leading Items in Nine Months—Japan Second with 113,297 Tons

WASHINGTON, April 27.—Canada was the leading purchaser of steel products in the nine months ended March 31, having taken 199,462 tons of nine leading products, or about 27 per cent of the total exports of those products. Japan, in second position, took 113,297 tons; Cuba bought 69,708 tons; Argentina 54,700 tons; Brazil, 28,812 tons; Mexico, 19,461 tons and Philippine Islands, 17,701 tons.

Canada continues to take heavy tonnages of steel plates, having absorbed more than 70 per cent of the March exports and almost 80 per cent of the exports in nine months. The remaining tonnage was pretty well scattered.

In galvanized sheets Canada led in March with 27 per cent of the total, followed by Argentina with 19 per cent and Philippine Islands with 15 per cent. In the nine months, however, Argentina had a large lead with more than 35 per cent of the total, followed by Canada and Philippine Islands with about 10 per cent each, Cuba with 8 per cent and Japan with 7 per cent.

Of black steel sheets Canada took more than two-thirds of the total in March, followed by Japan with 13 per cent. The reverse was true in the nine-month period, when Japan absorbed more than 62 per cent of the total and Canada less than 30 per cent. In the nine-month period of the preceding year Japan took more than twice as much as in the current year.

Steel rails in March were well distributed, only one country, Chile, taking more than 10 per cent. Brazil and Cuba, with a little over 7 per cent each, were in second and third positions. In the nine-month period, however, Cuba with 28 per cent of the total had a long lead over Canada in second position, with 6½ per cent. In this case Brazil was third and Japan fourth.

Barbed wire in March was well distributed, no country taking as much as 20 per cent of the total.

Brazil led, followed closely by British South Africa and Argentina. In the nine-month period Brazil took more than 30 per cent of the total, Argentina being second with about 9 per cent, Colombia third, then British South Africa, Canada and Mexico.

Plain and galvanized wire was sent more heavily to Canada than to any other country, both in March and in the nine-month period. In March, Brazil was second with less than half Canada's tonnage. In the nine-month period Mexico, Brazil and Australia were in second, third and fourth positions, with a combined tonnage less than that which went to Canada.

Tin plate in March was well distributed, Canada taking about 21 per cent, British India 16 per cent and Japan, China and Italy about 11 per cent each. In the nine months, however, Japan had a long lead with more than 40 per cent of the total, followed by Canada with 16 per cent, then by Argentina, British India, Cuba, China, Mexico and Chile in that order.

Heavy structural material in March was sent much more largely to Canada than elsewhere, with 72 per cent of the total. In the nine-month period Canada took a large tonnage, nearly 76 per cent of all, followed in succession by Cuba, Chile and Japan.

More than half of all steel bar exports in March went to Canada, the United Kingdom having been second, with about 16 per cent of the total. Cuba was third. In the nine-month period Canada was followed by the United Kingdom in second position, Cuba in third and Japan in fourth.

Of exports of pig iron, 1523 tons went to Canada, while shipments of scrap to that country amounted to 1955 tons. Exports of galvanized wire in March of this year totaled 2222 tons, while exports of plain wire totaled 1738 tons. Of the galvanized wire exports, 1508 tons went to Canada, while Brazil was the principal destination of plain wire exports, taking 814 tons. Canada was the principal market for foreign shipments of black iron sheets in March, taking 447 tons, and also led as the chief destination of exports of cold-rolled strip steel, taking 1475 tons, and of hoops and bands, taking 2170 tons. Mexico led as the principal purchaser of car wheels and axles, taking 808 tons, while shipments to Cuba and Canada were 467 and 465 tons, respectively.

Exports from United States by Countries of Destination
(In Gross Tons)

	Steel Plates				Galvanized Sheets				Black Steel Sheets			
	March		Nine Months Ended March		March		Nine Months Ended March		March		Nine Months Ended March	
	1925	1924	1925	1924	1925	1924	1925	1924	1925	1924	1925	1924
Total	11,240	7,251	54,995	72,533	13,047	7,027	113,087	72,883	6,264	6,263	84,189	147,457
Canada	8,179	6,699	42,894	54,750	3,567	2,426	12,145	14,360	4,598	5,026	24,465	29,012
Japan	36	...	431	911	441	29	8,051	13,400	795	595	52,916	108,462
Cuba	122	32	799	512	569	627	8,887	7,235	67	68	501	1,214
Philippine Islands..	...	20	848	538	1,978	1,372	10,993	7,915	...	6	454	335
Mexico	228	46	739	570	688	218	5,102	3,827	213	...	526	...
Argentina .....	...	...	...	...	2,468	556	40,949	4,553	14	156	593	928
Chile .....	...	...	...	...	88	191	1,153	1,794	...	...	...	...
Colombia .....	...	...	...	...	512	252	4,560	2,019	...	...	...	...
Central America...	...	...	...	...	198	226	3,364	2,861	...	...	...	...

	Steel Rails				Barbed Wire				Plain and Galvanized Wire			
	March		Nine Months Ended March		March		Nine Months Ended March		March		Nine Months Ended March	
	1925	1924	1925	1924	1925	1924	1925	1924	1925	1924	1925	1924
Total	18,709	7,402	136,620	217,613	7,700	7,191	66,121	52,130	3,960	3,669	22,041	58,662
Canada	261	303	8,653	44,214	206	112	4,306	2,073	1,709	1,345	7,514	11,244
Japan .....	...	343	4,378	79,299	...	...	...	...	3	41	523	15,828
Cuba	1,329	1,783	37,034	31,401	411	971	624	6,447	185	228	1,293	1,788
Philippine Islands..	116	608	3,600	4,040	...	...	1,758	...	...	...	48	...
Mexico	559	...	3,013	...	636	80	4,096	2,754	270	302	2,706	2,626
Argentina .....	...	...	...	...	1,340	1,287	5,919	6,832	9	511	457	6,813
Chile	2,060	59	4,508	9,221	...	...	...	...	7	70	73	1,437
Colombia .....	...	...	...	...	549	607	5,494	3,229	...	...	168	...
Brazil	1,344	252	6,005	5,674	1,501	1,815	20,536	10,914	829	132	2,271	7,048
Australia .....	...	...	...	...	86	261	1,947	3,168	367	123	1,973	3,474
British S. Africa..	...	...	...	...	1,383	197	4,830	3,236	...	...	...	...

	Tin Plate				Plain Heavy Structural Material				Steel Bars			
	March		Nine Months Ended March		March		Nine Months Ended March		March		Nine Months Ended March	
	1925	1924	1925	1924	1925	1924	1925	1924	1925	1924	1925	1924
Total	14,424	12,902	104,552	132,387	6,741	8,782	76,155	77,394	12,389	9,531	71,025	102,198
Canada	3,025	2,470	17,159	22,196	4,867	...	57,787	...	6,616	...	31,546	...
Japan	1,670	729	42,933	40,942	362	...	2,628	...	227	...	1,662	...
Cuba	744	637	4,176	3,927	467	...	10,127	...	716	...	8,096	...
Mexico	764	389	3,279	2,372	...	...	...	...	...	...	...	...
Argentina	643	259	6,782	9,589	...	...	...	...	...	...	...	...
Chile	246	763	2,731	2,603	47	...	3,004	...	...	...	...	...
China	1,614	3,370	3,673	20,665	...	...	...	...	...	...	...	...
British India	2,333	...	5,390	10,504	...	...	...	...	...	...	...	...
Hong Kong	91	809	558	5,553	...	...	...	...	...	...	...	...
United Kingdom...	...	...	...	...	...	...	...	...	1,986	...	11,972	...

Demand Sherman Act Modification

(Continued from page 1357)

"During the year we have continued our efforts to convince certain manufacturers of the advisability of allowing the usual and customary premium of 2 per cent for cash. A number of members have energetically and actively assisted in this work and it is pleasing to report that advice received indicates some manufacturers have acceded to these requests.

Control of Resale Prices

"During the year we have given considerable time and thought to the resale price situation and we have come to the conclusion that manufacturers who suggest resale prices should insist upon their maintenance, and if not willing to do so, should refrain from suggesting such prices, inasmuch as the suggestion of prices which are not observed places the price cutter in a position to demoralize trade.

"An overwhelming majority of distributors are willing and anxious to comply with manufacturers' requests as to the manner in which their products should be distributed, and it is therefore most unfair to permit a few distributors to use standard branded goods as leaders to the disadvantage of all other distributors.

"In November we supplied our members with an opinion of Felix H. Levy, in which he stated that while a manufacturer cannot exact or receive a promise or agreement to maintain suggested resale prices, the manufacturer can refuse to sell to a concern not observing such resale prices.

Low Lists and Small Discounts

"During the year a number of manufacturers have recognized the justness of our contention that low lists and small discounts operate to the disadvantage of their distributors and have taken steps to remedy this condition. It is suggested that our members continue to draw this matter to the attention of those manufacturers who still maintain low lists.

Overhead Expense Research

"The report of our research bureau covering the overhead expense of our members during the year 1924 is an extremely interesting compilation. It gives the detailed overhead figures of 52 members, indicating the average overhead during the year 1924 was 21.13 per cent as compared with 19.76 per cent for 1923, and 21.65 per cent for 1922.

Why the Distributor is Essential

"We have collected some very interesting information which should be helpful to manufacturers in the formulation of their distributing problems.

"Our figures indicate that our 212 members located in 84 cities have an average of 12 salesmen, that the average square feet of floor space used for warehousing goods is 60,000 and they are able to make delivery within 12 hours to points averaging from 100 to 150 miles from their warehouses and that they carry an average stock valued at \$250,000 which is available in the average territory to 5700 users of supplies and machinery.

"The figures given above are averages and must be considered as such, but they serve to give a picture of the supply distributor which should convince of the indispensability of the service performed by our members."

Eliminating Unprofitable Lines

In a paper on the subject, "Increasing Sales by Eliminating Unprofitable Lines," Robert W. Taylor, Smith & Pearson, Inc., Auburn, N. Y., called attention to the good work which already has been done by the Division of Simplified Practice, Department of Commerce. He pointed to several items such as steel barrels and steel pulleys in which good results have been obtained.

"When we carry unprofitable lines we have a daily waste. The axe, which you would suppose could

be made in pretty nearly a standard form, is cataloged in 6118 varieties. Explosives are listed in 625 degrees of strength, 40 different diameters, 14 lengths and six styles.

"To persuade manufacturers and merchants to reduce all this production to a comparatively few standard forms runs contrary to the traditions of business and makes rather slow headway. The wise distributor today sees the folly of wasted effort and money in the purchase and in the sale of kinds of goods that do not differ materially from others that are in much more general demand. When we eliminate duplicate lines we have a total asset, it has no liabilities. We should all have in our business an economic laboratory in which we would study the problems of efficiency and economy and especially that of waste elimination."

Greeting from Manufacturers' Association

A message of greeting from the American Supply and Machinery Manufacturers' Association, which meets this week at Atlanta, Ga., was delivered to the distributors by John C. Ruf, its president. Mr. Ruf is with I. B. Williams & Sons, Dover, N. H.

"Business is not discouragingly bad," said Mr. Ruf. "About all that should be said is that it is not abnormally good. There was too much optimism immediately after the election, but the fundamental conditions in the country are sound and therefore we may expect general progress. The depressed feeling exhibited by many steel producers is not a serious indication of the future, for steel sellers are not satisfied unless sales are running ahead of shipments."

The manufacturing point of view was also expressed by George W. Eckhardt, Henry Disston & Sons, Inc., Philadelphia, who discussed business conditions. Mr. Eckhardt said that in the lines with which he is familiar there had come a change for the better within the past few weeks.

Bolt and Nut Industry Has Too Much Capacity

An interesting presentation of the dilemma facing the bolt, nut and rivet industry was made by Charles J. Graham, president of the Bolt, Nut and Rivet Manufacturers' Association, who pointed out that one cause for the continued depression in that industry is a 40 per cent excess capacity. Mr. Graham hopes that great good will result from the simplification work now being carried out between the Division of Simplified Practice, Department of Commerce, and the manufacturers. He said that nearly every railroad in the United States has its own style of track bolts and that the money invested by the industry in dies for making these many varieties of track bolts is considerable. He said that one plan now being developed, which it is hoped will take up some of the slack in the industry, is to persuade the railroads to give up the manufacture of bolts, nuts and rivets in their own shops. Railroad manufacturing of these commodities, Mr. Graham said, is very uneconomical, being done on a piece work basis which if applied to the average bolt and nut plant would mean \$150 to \$200 per day in wages for some workmen. It is also hoped that the railroads will agree on a uniform track bolt and thus a great saving will be effected. Standardization of packages and the eliminating of many sizes are also aims of the manufacturers and the Department of Commerce.

Mr. Graham called attention to the difficulties manufacturers are having in making a sufficient profit. He called attention to a compilation recently made showing that steel companies producing 85 4/10 of the ingots made last year an average profit of only 4 59/100 per cent on their invested capital.

The solution, Mr. Graham thinks, is in stabilization of industry and prices and not in reduction of wages. Wage reductions are not to be thought of, he declared, because periods of low wages are always periods of low profits.

Discussing basic conditions he pointed out that the railroads of the country in the first quarter of the year carried the greatest volume of traffic ever handled in any similar period in the history of railroad transportation. Yet during this period there was a large num-

ber of idle cars, this showing, he said, with what efficiency the railroads are now operating.

General Discussion

A discussion of profits, turnover, hand-to-mouth buying and other subjects of pertinent interest to manufacturers and distributors occupied a large part of one of the sessions. George C. Puchta, Queen City Supply Co., Cincinnati, told what he had accomplished in increasing turnover and cutting down his inventory. To illustrate how he worked toward this end, he told what had been done in twist drills, and the same methods were applied to all other lines. He kept a record of the turnover of each size and type of twist drill and found that while some were "turned over" four or more times a year others had a turnover very much smaller. Those which were "slow movers" were ordered in smaller quantities and lesser numbers were carried in stock. Applying this principle through the entire stock, Mr. Puchta was able to reduce his inventory about \$50,000 last year.

A general discussion followed and opposite points of view were presented. One or two distributors said that they carried large stocks, having built up a reputation among their trade of always having goods in stock and that to reduce stock too greatly would be to lose sales. Others held that frequent ordering and a constant watchfulness of the inventory would accomplish the same purpose and reduce expenses. Attention was called to the fact that a multitude of small orders were entailing a large expense to the manufacturers and a case was cited of a large manufacturing company which has recently sent out notices that hereafter there will be a surcharge of 10 per cent for all parcel post and express shipments and also on all direct shipments to distributors' customers. This manufacturer is said to have shipped 11,430 express and parcel post packages in March alone.

Buyers Lack Confidence in Prices

Causes of the hand-to-mouth buying now a pronounced characteristic of business were looked into, and the view was expressed by T. James Fernley, advisory secretary, that such buying is due to lack of confidence among buyers in the stability of prices. Mr. Fernley said that this view had been expressed to him by large buyers. He stated further that one large buyer told him that where prices were guaranteed against decline he would cover his requirements for six months, but that when such guarantee was not given he would not cover for a greater period than three months. The explanation of this attitude was that gross margin and gross overhead are now so close together that buyers such as supply men cannot afford to run chances of taking inventory losses as such losses could very easily wipe out the small profits now being made.

Guarantees Against Price Declines

As a means toward eliminating, in part at least, the great number of small orders it was suggested that manufacturers, whenever possible, extend guarantees against price decline. At another session it was explained by a manufacturer that this might be possible in the case of highly manufactured articles in which labor rather than raw material was the chief cost, but that on articles in which the raw material is the chief cost factor it is impossible for manufacturers to make guarantees against price decline when prices of steel and other materials show such frequent fluctuations as have prevailed in recent years.

Referring to the use of the phrase, "hand-to-mouth buying," one of the supply men asserted that he called it "common sense buying," adding that under present conditions any other method of buying is extremely hazardous.

A manufacturer said that he believed he spoke for manufacturers generally in saying that they do not object to small orders as such, but that they do object to rush orders, it being orders of the latter class that involve the greatest expense in handling, for it fre-

quently becomes necessary to pay overtime wages to employees to get out such orders.

Salesmen's Compensation and Vacations

As to best methods of compensating salesmen, there were varying opinions, but several said that good results had been attained by the payment of bonuses. Automobiles for salesmen were highly commended because of greater number of calls that can be made, but one distributor said that his salesmen were making no more calls with automobiles than they did when they went on foot and in street cars. President Ackles said that the T. B. Rayl Co. buys the car each salesman uses and makes an allowance of \$50 a month for maintenance. If the salesman desires a better car than the company is willing to provide, he is permitted to pay the difference out of his own pocket. Thus the car becomes actually the salesman's property and he may use it outside of business hours if he wishes to.

It developed that the summer vacations are becoming somewhat of a problem to many houses. The Charles A. Strelinger Co., Detroit, has a plan which evoked some discussion. Mr. Strelinger said that every employee gets three weeks vacation with pay, but that deductions from this time were made for absences and tardiness. He said that only about 20 per cent have a good enough record to justify the full three weeks and that the average vacation is 10 days to two weeks. Mr. Strelinger said the plan worked very well. A distributor said that as nearly all employees wanted to take their vacations in July or August, his company had offered a few days extra to those willing to go in June or September and had found the plan worked successfully in spreading out the vacation period.

Other discussions were on such subjects as: "The Value of a Perpetual Inventory"; "Increasing Sales by Eliminating Unprofitable Accounts"; "The Conditions Affecting Volume and Profit in Various Lines."

"How the Manufacturer Can Assist the Distributor" was the subject of a paper by W. J. Radcliffe, E. A. Kinsey Co., Cincinnati. E. B. Hunn, C. S. Mersick & Co., New Haven, Conn., discussed the subject, "How Can Sales Be Increased in the Face of Continued Growing Competition?" "The Supply Distributor as a Merchandiser" was the subject of a paper by W. H. Taylor, William H. Taylor & Co., Allentown, Pa., who will shortly celebrate his fifty-third year in business. "Relations Between the Manufacturer and Jobber," a paper prepared by E. G. Puckett, Fort Wayne Oil & Supply Co., Fort Wayne, Ind., was read for him in his absence. "Prices and Profits" was the subject handled by Arthur B. Paull, Beals, McCarthy & Rogers, Buffalo.

The machine tool section held a short session under the chairmanship of T. W. Carlisle, Strong, Carlisle & Hammond Co., Cleveland and Detroit. The used tool situation was thoroughly discussed and it was the opinion of some of the members that money can be made in used tools only if the dealer purchases tools at their real values and does not pay excessively for them because of a desire to dispose of a new tool in its place. A consensus of opinion was that demand for standard tools is very light, but that a fair business in special and automatic production machinery is being done. All agreed that there has been a slight pick-up in business since April 1.

A banquet was held Monday evening and the speakers were Dr. E. J. Cattell and Bartley J. Doyle, both of Philadelphia. A swimming exhibition in the Ambassador pool, followed by a dance, comprised the entertainment Tuesday evening.

Detroit, Baltimore and New York contended for the privilege of entertaining the association at its 1926 convention, and the choice will be determined by a mail vote.

Representing an investment of \$125,000, including equipment, the new plant of the Metals Refining Co., Los Angeles, has begun production. The plant was constructed by the Union Iron Works and is 50 x 100 ft., consisting of a main structure, laboratory and office building. The company will refine waste steel and tin by means of a new chemical process.

Methods of Welding Inspection

(Concluded from page 1337)

are broken apart so that the men may see the results of the welding. When competent, the men are assigned to one of the regular crews for further instruction, and upon passing a final test, take their place as welding operators. Tests of joints are made by the destruction process and from time to time tests are made by outside laboratories. Careful inspection of welding is made by the foreman during the welding and after the job is finished.

The importance of the careful training of welding operators was stressed by J. C. Lincoln, Lincoln Electric Co., Cleveland, in his paper on the "Welding of Rail Joints." The quality of work depends, he said, on the skill and care of the operator more than on any other one thing. The methods of making a seam weld were briefly discussed as well as the best method of getting ductile metal in the weld, the short arc with proper fusion being said to be the most important single requirement, this taking a skilled operator. It was said that before a welder is permitted to weld a joint that stays in the track, he should be able to make a satisfactory overhead weld which requires a short arc and proper manipulation. Then he should weld a number of test joints and have the plates wedged off so that he can see what he has been doing. When he has acquired sufficient skill so that it is almost impossible to wedge the plates off a test joint, it is safe to let him make joints that are to stay in the track, and not before.

Improvement of welding practice was said by F. E. Rogers, industrial engineering department, Air Reduction Sales Co., New York, in his paper on "Gas Welding Practice," to be largely a matter of eliminating the variables by standardizing on everything that can be standardized. "By standardizing the conditions you will help the operator and in many cases will find that faults of practice have been due to faults of equipment conditions outside the control of the operator," he said. "Let us do everything possible to pin the responsibility for sound welds on the operator. When that is done, I believe that most operators will be able to show satisfactory work."

Proficiency Tests Necessary to Qualify Welder

G. O. Carter, Linde Air Products Co., New York, in a paper on "Determining and Increasing the Skill of Welders," emphasized that a blowpipe user who does not deposit good weld metal or one who does not bring the base metal to fusion, will not make a good weld. It is not difficult to dispose of the man who falls completely short of his first essential, he said, but many welders do not even know that they fall a little short, not dreaming that their welds are deficient in penetration or that the deposited metal is burnt or that both these evils appear in their work. For these reasons, length of welding experience is not a correct guide for selection of welders. Nothing but a proficiency test will suffice to properly qualify a welder. It is important that a welder should be able to make a good weld when being observed, because inspectors, foremen, engineers and others may be expected to observe a welder while he is in the midst of production work. About half of those who apply for welding work fall down badly when the specimen welds are tested as to penetration. In most cases fusion extends only about one-half the thickness of the base metal. This class of welder can usually be coached so that in a few hours he is making entirely satisfactory weld. In coaching welders it is not always best for the teacher to use the torch himself. Whenever the character of work for a welder is materially changed, he should be called upon to make a qualifying weld.

Encouragement of the welder and getting him interested in producing welds of the character wanted was stressed as desirable in a paper on "Welding Pipe Lines," by F. A. Lydecker, Public Service Electric & Gas Co. Speed, while important, must not be obtained at the expense of good workmanship. A record kept

of each man's work is helpful and the knowledge that such a record is carried will spur a man on to his best efforts.

"Pressure Vessel Welding" was the title of a paper by Augustine Davis, Jr., president of the Davis Welding & Mfg. Co., Cincinnati. In the manufacture of truck tanks, dependence is placed first upon the training of each welder, regardless of his previous experience, and new welders are not permitted to work on oil tight joints until the foreman and superintendent have passed upon their fitness and reliability for this work. Constant observation is made of the work of all welders employed on oil tight cans. Prepared tests of the company's products are made from time to time in outside testing laboratories. Welders are required to stamp their shop numbers on each weld as it is completed, this providing a means of tracing defective work, and also giving a check on the reliability of the welders. This method is said to have resulted in uniform work of high quality. It has also been found desirable to have welders specialize on certain gages of steel. Welding on a piece-work basis is not permitted. It was said to have been found that more failures come through the efforts to produce welds at a low cost, without having reliable, conscientious workmen than from any other cause.

Speed and Good Welding Do Not Go Together

A thoroughly competent welding supervisor can do more toward obtaining good welds than any other medium, was an opinion expressed by A. G. Bissell, Westinghouse Electric & Mfg. Co., East Pittsburgh, in his paper on "Welding in Shipyards." The supervisor is in contact with the operators and by observing their work and having them make test welds he can determine the ability of the individual welder and place him on such work as requires his special ability. "In this way," said Mr. Bissell, "it is possible to obtain good arc welding."

The man to be trained as an arc welding operator should be carefully picked. He should be a man having job pride. Piece work does not encourage good welding as speed and good welding do not go together. The operator should be carefully trained and should not be rushed in his practice work. After becoming proficient in depositing metal in the various positions, he should make test samples and break them to see the results of his work. When he is capable of making a reliable joint he should be put on simple construction jobs under a competent operator or supervisor and gradually advanced to more difficult work.

Other papers included: "Rail Joint Welding," by H. F. A. Kleinschmidt, Lorain Steel Co.; "Electric Spot Welding," J. W. Meadowcroft, Edward G. Budd Mfg. Co., Philadelphia; "Electric Spot Welding," H. A. Woofor, Thomson Electric Welding Co., Lynn, Mass.; "Railroad Shop Welding," W. H. Ludington, Air Reduction Sales Co., New York; "Inspection of Spot and Butt Welds," A. L. DeLeeuw, consulting engineer, New York; "Welding in Railroad Shops," E. Wanamaker, electrical engineer, Chicago, Rock Island & Pacific Railway Co.; "Non-Destructive Tests of the Reliability of Arc Welds," by W. L. Warner, General Electric Co., Schenectady; "Welding in the Oil Industry," F. C. Fyke, Standard Oil Co. of New Jersey; "Pressure Vessels," by R. H. Roberts, York Mfg. Co., York, Pa.; "Inspection of Welds in Pressure Vessels," S. W. Miller, Union Carbide & Carbon Laboratories, Long Island City, N. Y.; "Inspection of Thermit Welds," W. M. Kennedy, W. & A. Fletcher Co., Hoboken, N. J., and "Welding in the Enamel Lined Tank Industry," by W. B. Miller.

The Jackson Iron & Steel Co., Jackson, Ohio, recently produced 242 tons of 6½ per cent silvery iron for a day's run, which the company states is the record for production of high silicon iron in southern Ohio. The furnace was blown in on the present blast Nov. 30, 1923, and has had a very successful operation. During the shut down in 1923 for relining many improvements were made which have materially aided in maintaining a high rate of production with improved quality.

Steel Industry War-Time Earnings

(Continued from page 1345)

pose of war-time price regulation, especially as the Steel Corporation was not a high-cost company. For most of the products considered these cost data covered more than 90 per cent of the total output.

The costs presented in this report have been analyzed from several standpoints besides that needed by the price fixing committee of the War Industries Board for determining maximum prices. For that committee the main question was the "marginal" or "bulkline" cost; that is, the cost limit for that percentage of the total output of a product for which a remunerative price was deemed necessary. The data were originally compiled in a form to provide the information needed. Other significant cost data are presented herein, such as average cost, the changes in average cost during the war and the average costs for different groups of companies, distinguished according to the extent of their integration.

During 1920 another inquiry was made by the commission into the iron and steel industry with a view to the current publication of trade information, to ameliorate and stabilize business conditions. For this work Congress made a special appropriation. The collection of this information, however, was so hampered by a court injunction based on a denial of the power of Congress to authorize the commission to require reports on prices, costs and profits, that it was discontinued after a brief period. During this time, nevertheless, fairly extensive data were obtained regarding the costs of production in the first half of 1920, which furnish a basis of comparison with the costs in 1918.

Cost of Raw Materials

The two chief raw materials for making pig iron are iron ore and coke, much of which are produced directly by the iron and steel companies, or by their subsidiary companies. The average cost of "lake" iron ore in 1918 was \$2.26 per ton at the mine and \$4.19 per ton at "lower lake ports," where such ore is usually sold. About 90 per cent of this ore cost \$4.71 per ton or less at lower lake ports. There was a great increase in cost in 1918 over earlier years. In 1916 the average cost at lower lake ports was only \$2.47 per ton, as compared with \$4.19 in 1918.

An even larger increase occurred in the cost of beehive coke. The most important producing region is in western Pennsylvania (including the Connellsville district), for which the average reported cost in 1918 was \$3.93 per net ton. About 90 per cent of this production cost \$5 per net ton or less during the last quarter of 1917, but this 90 per cent marginal cost increased to a little over \$6.50 during the last quarter of 1918. In the first half of 1920 the average reported cost of beehive coke in this region was 20 per cent higher for identical companies than in the last half of 1918.

Cost of Pig Iron

The fundamental cost for the iron and steel industry is that of pig iron, because it combines the costs of the chief raw materials together with the transportation expense of assembling them. The principal kind of iron for steel production is basic pig iron, for which the average reported cost in 1918 was \$21.99 per ton. The ore and other metallic material used, on the average, cost \$10.65; the coke, \$7.74, and labor \$1.04 per ton of product.

The integrated steel companies, including the Steel Corporation, using chiefly their own output of ore and coke (Class I) had an average cost in 1918 of \$21.02, while those purchasing these raw materials (Class II) had an average cost of \$25.43. The difference was chiefly in the cost of the coke and labor, but the deduction from cost of all intercompany profit on ore and coke would considerably increase this difference. For merchant furnaces, that is, those selling their output to other companies, the average reported cost of basic pig iron was higher for the northern than for the southern companies. Taking the average of the monthly figures in 1918 of all companies for basic pig iron, the 90 per cent marginal cost was \$27.56 per ton,

as against \$21.99 for the average cost. The 80 per cent marginal cost averaged \$24.79 per ton, the low costs \$17.28 and the high costs \$40.85 per ton. The costs for Bessemer and foundry pig iron in 1918 were higher than for basic.

The average cost for basic pig iron in the first half of 1920, as compiled for identical companies, was less than $\frac{1}{2}$ per cent lower than in the last half of 1918, while for Bessemer pig iron it was 2 per cent higher. The average cost of basic pig iron during the five-year period, 1902 to 1906, as shown by the Bureau of Corporations, was \$12.30 per ton; the average cost in 1918 of \$21.99 per ton shows, therefore, an increase of about 79 per cent.

Cost of a Typical Steel Product

Even to summarize the results of the cost comparisons made in this report for all of the various steel products covered would be impracticable as well as tedious. The results for sheared plates, one of the most important products, furnishes a fair illustration of the general conditions.

The average reported cost of sheared plates in 1918 was \$55.55 per ton, and for the four integration classes already described, including the Steel Corporation, as follows: Class I, \$52.01; class II, \$68.96; class III, \$70.48; class IV, \$69.88. The marked advantage thus shown for the Class I companies was chiefly due to lower costs of the metal used to make plates, but noticeably, also, to lower labor costs. For companies in the three other classes the circumstances of the particular companies were more important, apparently, in influencing costs than the extent of integrations, as is evidenced by the absence of marked differences in the average costs of classes II, III and IV. For 90 per cent of the reported production the average monthly marginal cost of sheared plates in 1918 was \$70.60 per ton, as against an average low cost of \$45.27 and high cost of \$89.52. For identical companies the average cost of sheared plates for the first six months of 1920 was 4 per cent higher than for the last six months of 1918. The increase in the average cost in 1918 over the five-year period, 1902 to 1906, was 113 per cent.

General Comparison of 1918 Steel Costs

Taking eight typical products for which the data are most available, there was a decided increase in the costs during the war period. The average cost in the last quarter of 1918 was about 18 per cent higher than that in the last quarter of 1917.

Considering the general relationships subsisting between average costs on the one hand, and low, high and marginal cost on the other hand, a comparison of the data for 15 products shows that the low costs were 18 per cent less than the average costs, that the high costs were 71 per cent above the average costs, and that the 80 per cent and 90 per cent marginal costs were 10 per cent and 22 per cent respectively above the average costs. These figures are especially interesting because these relationships hold fairly well for individual products as well as for the average of all 15 products.

A comparison of the costs of rolled steel products for the four integration classes mentioned above shows in each case a decidedly lower cost for Class I than for any of the other classes, but the differences among Classes II, III and IV were not, on the average, very marked. Comparing the costs of four typical steel products—sheared plates, structural shapes, merchant bars and tin plate—the costs of Class II and Class III exceeded Class I by 31 per cent, on an average, while those for Class IV were 35 per cent higher.

Comparison of Costs in 1918 and in Other Periods

Comparing the changes in average costs between the last half of 1918 and the first half of 1920 for identical companies, it is found that for 10 important products for which data were available, the average increase in cost was about 3 per cent.

Generalizing the increase in average costs between the five-year period, 1902 to 1906, as compiled by the

Bureau of Corporations, the average costs found by the commission for the war year, 1918, it appears that the increase was about 100 per cent.

While the foregoing data as to costs are comparatively recent, it should be remembered that the 1918 costs were incurred under abnormal war conditions, so that the amounts shown cannot be assumed as characteristic of normal times.

The 8-Hr. Day and Present Costs

Since 1920 there have been important reductions in wages, followed in the latter part of 1923 by a change from the 12-hr. day to the 8-hr. day.* A committee of the American Iron and Steel Institute, the chief trade association in the steel industry, in a report made in May, 1923, estimated that the introduction of the 8-hr. day "would increase the cost of production on the average about 15 per cent." The 8-hr. day has been put into general operation in the steel industry (though not on the precise basis for which the above estimate was made), and the actual effects of this important reform on the costs, prices and profits of steel products are now capable of accurate determination from the accounts of the companies. The annual reports of some of the companies, including the Steel Corporation, state that there has been a considerable increase in cost, but details are not given.

Relations Between Costs and Rate of Earnings

In view of the low costs of the highly integrated Class I companies, together with their comparatively low rates of earnings, further comparisons were made regarding these relationships. To make a more accurate analysis in this respect, identical companies (ex-

*Only about one-fifth of all steel workers were affected by this change, as some 80 per cent already were working from 8 hr. to 10 hr. per day.—EDITOR.

cluding the Steel Corporation) were taken for which data were available regarding costs, rate of earnings and investment per ton of ingots produced. The average results showed comparatively high investment per ton of steel for the Class I companies and low investment for Classes II and III companies, while the relationships of cost and profit were generally like those already described, namely, lower average costs for companies in Class I than in Classes II, III and IV, and a lower rate of profit, on the average, for Class I companies than for those in Class III or Class IV, though not for those in Class II. High average investment per unit appears to explain, in large part, the lower profits of Class I companies.

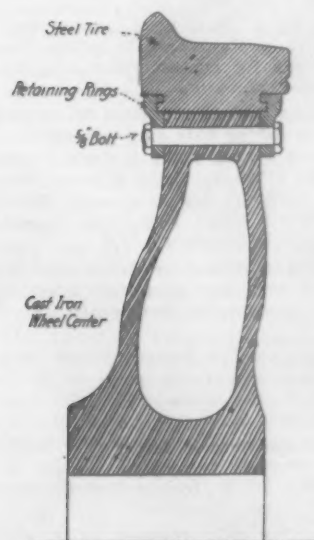
A further study of this subject, grouping the companies according to rate of return merely (i. e., disregarding the integration classes), showed that high-profit companies had a low average both for costs and investment per ton of steel, while both costs and investment were above the average for the low-profit companies. Similar comparisons for pig iron companies, which do not make steel, also show the importance of investment per ton of output, as well as cost, in regard to rate of return.

For both steel and pig iron companies a comparison of rates of return, quantity of production and total amount of investment shows that the companies with the highest rates of profit were not those with the largest average production, but rather those with the smallest average investment. The companies with medium profit, on the other hand, had comparatively large production and investment.

Capable management or good fortune in investment and operation were apparently the major factors in determining the rate of profit, and they, rather than mere size, were the characteristic elements of business success.

Derailment Caused by Loose Tire

Four passengers were killed and 16 injured in the derailment of the last car on a train on the Florida East Coast Railway, Nov. 14. The (somewhat unusual) cause of this derailment is reported by the Interstate Commerce Commission to have been the accidental disassembling in service of a built-up wheel consisting of cast iron center, steel tire and two steel retaining rings



Section Showing Construction of the Wheel Which Failed. The space between center and tire, which should not have existed, permitted the tire to "work" and eventually to tear itself off

held in position normally by ten through bolts. A section of this wheel, showing construction, appears in the illustration.

Contrary to custom in the case of tires of this sort, it did not fit the wheel by shrinkage; the inside diameter of the tire was $\frac{3}{32}$ in. larger than the external diameter of the wheel center. There was evidence that a liner had been placed between the tire and the center, but that the looseness between the two had existed for some time before the derailment. The records show

that the wheels on this axle had run 10,956 miles since the latest tires had been put on. At the time of the derailment, or preceding it, the bolts had come out of the retaining rings, nine of them being entirely missing. One bolt, considerably bent, remained attached to the outer ring.

It will be noted that the bolts clamped the retaining rings to the wheel center. The tire might be loose with the bolts and rings tight. The load on the axle would close any clearance between the tire and the center in the lower part of the wheel and defy the usual inspection by the sound of a hammer blow. The conclusion is that conditions point to the necessity of a more rigid inspection of wheels of this character than heretofore has been considered necessary.

Youngstown Sheet & Tube Co. Earnings for First Quarter

The first quarter financial statement of the Youngstown Sheet & Tube Co., Youngstown, Ohio, shows net earnings after charges and federal taxes of \$3,695,626, equivalent after preferred dividends to \$3.48 per share on the 987,606 shares of outstanding common stock. This earning rate compares with net of \$3.55 per share for the first quarter of 1924, when steel prices were averaging from \$6 to \$10 more than the market during the past three months.

For all of 1924, the company reported net earnings available for common, after preferred dividends and all charges, equivalent to \$6.68 per share of common stock. Earnings the first quarter of this year were at the annual rate of \$13.92 per share. The company is now paying dividends on common stock at the rate of \$1 per share per quarter.

Profits of the nature indicated reveal how the Sheet & Tube company is able to expend large sums for new construction without special financing. The company is continuing its policy, as the statement reveals, of making liberal charges for depreciation of properties, depletion of minerals and equipment depreciation.

Machinery Markets and News of the Works

LARGE ORDER FROM ITALY

Market in General Is Quiet but Improvement Is Looked For

Oil Burner Co. Inquires for 25 Machines—Rockford Board of Education Expected to Place Orders

OUTSTANDING in the reports of the week is an order for 30 automatic screw machines received by a Cleveland machine tool builder from the Fiat Co. Italy. Orders for screw machines were also placed by English, French and German companies. The market in general has been quiet, but there is a feeling that as the present month progresses there will be an increase in activity.

The Burlington, the Illinois Central and the Union Pacific are expected to place orders soon against their pending lists. The requirements of the Pittsburgh &

Lake Erie and the Baltimore & Ohio railroads are reported as of good size, although appropriations have not yet been voted. The Sante Fe has added two items to its list and the Rock Island lines have entered the market for two woodworking machines. There has been a fair amount of railroad buying in the New York district, some of it applying against long standing inquiries.

Twenty-five machine tools are wanted by the Hart Oil Burner Co., Peoria, Ill. These include 10 turret lathes, six drilling machines, seven engine lathes and two milling machines.

Orders against the extensive list of the Rockford, Ill., Board of Education are expected to be placed by May 15.

The Nash Motors Co., Kenosha, Wis., is reported to be contemplating rearrangement of its cylinder department and installing additional equipment.

The orders for machine tools recently placed by the Hall Printing Co., Chicago, total approximately \$40,000.

Business in small tools has been good.

New York

New York, May 5.

WHILE machine tool business generally shows no improvement, there has been a fair amount of railroad buying in the past week, some of it on inquiries that have been pending for some time. The Virginian Railway bought from one company a 74-in. x 21 ft. engine lathe and is reported to have purchased other shop equipment. The Florida East Coast bought a 44-in. boring mill, a 27-in. lathe and a 24-in. shaper. The New York Central ordered a 90-in. axle journal turning lathe and the Northern Pacific bought a 48-in. car wheel borer. The Louisville & Nashville bought a 100-ton bushing press and the Chicago, Rock Island & Pacific a 48-in. planer and a 12-ft. plate bending roll. The Carnegie Steel Co., Pittsburgh, ordered a 5-ft. radial drill and a 36-in. x 20-ft. engine lathe.

The Intertype Corporation, 50 Court Street, Brooklyn, manufacturer of type-setting machines and parts, has acquired property at Harrison, N. Y., and will erect a plant to give employment to more than 600. Charles W. Gaskel is vice-president.

Contract has been let by the Company of Mastercraftsmen, Inc., Forty-seventh Street and Fifth Avenue, New York, manufacturer of furniture, to the Turner Construction Co., for its five-story plant, 60 x 240 ft., at Flushing, L. I.

W. C. Bower, manager purchases and stores, Michigan Central Railroad Co., room 344, 466 Lexington Avenue, New York, is asking bids until June 1 for electric locomotives, serial contract No. 12-1925.

George Fress, 101 East 125th Street, New York, architect, has completed plans for a two-story automobile service, repair and garage building at 202-18 East Fifty-fifth Street, 100 x 200 ft., to cost \$100,000 with equipment.

The Green, Matthews & Taylor Co., 960 Home Street, New York, manufacturer of elevating machinery, cement equipment, etc., has plans for a one-story addition, 100 x 120 ft., to cost about \$33,000. John De Hart, 1039 Fox Street, is architect.

The Atlantic Service Co., 711 Caton Avenue, Brooklyn, manufacturer of saws and kindred products, plans the installation of a number of grinding machines.

The Nahon Co., Fifty-third Street and East River, New York, manufacturer of furniture, cabinets, etc., has leased

the five-story factory, with adjoining warehouse and dock at 447-49 East Fifty-second Street, totaling about 75,000 sq. ft., for a new plant.

The Fieldstone Garage, Inc., 540 Bergen Avenue, Bronx, New York, has plans for a one-story service, repair and garage building, 88 x 225 ft., estimated to cost \$70,000. Moore & Landsiedel, Third Avenue and 148th Street, are architects.

James B. White, commissioner of accounts, Saratoga Springs, N. Y., will receive bids until May 18 for all machinery and operating equipment for a municipal garbage incinerator plant, from 10 to 50 tons per day capacity. Samuel J. Mott, 377 Broadway, is city engineer.

C. S. White, purchasing agent, New York Central Railroad Co., 466 Lexington Avenue, New York, is asking bids until May 15 for requirements for contact rail and splice plates, serial contract No. 13-1925.

The R. K. LeBlond Machine Tool Co., Madison Street and Edwards Road, Cincinnati, is asking bids on a general contract for its proposed Eastern branch plant at Long Island City, one and two-stories, 180 x 180 ft. Zettel & Raop, Mercantile Library Building, Cincinnati, are architects; Harry L. Walker, 144 East Fifty-fourth Street, New York, is associate architect. R. K. LeBlond is president.

The Board of Commissioners, Ridgewood, N. J., will receive bids until May 19 for deep well pumping equipment and accessory machinery for a municipal waterworks. E. J. Fort is village engineer.

The National Cold Storage Co., 19 Hudson Street, New York, has filed plans for a new cold storage plant at 184-90 Ninth Street, Jersey City, N. J., to cost about \$35,000. A. S. Henderson is company architect.

John T. Rowland, Jr., 100 Sip Avenue, Jersey City, N. J., architect, has plans for a two-story automobile service, repair and garage building, 188 x 260 ft., to cost \$100,000 with equipment.

The Board of Education, City Hall, Newark, N. J., will receive bids until May 13 for steel lockers, manual training work benches, iron and steel, sharpening tools and other equipment, as per specifications. R. D. Argue is secretary.

Property of the Simms Magneto Co., 275 North Arlington Avenue, East Orange, N. J., including equipment, will be offered at public sale on the premises May 19-21, inclusive, under the direction of Harry H. Pond, liquidator for bank loans.

The Board of Education, North Bergen, N. J., plans the installation of manual training equipment in the new 40-classroom school, for which plans have been completed, estimated to cost \$610,000.

The Crane Market

INQUIRY is light but there has been a fair volume of purchasing in the past week. But little new inquiry in the locomotive crane field has appeared recently. The West Virginia Pulp & Paper Co., New York, which has been obtaining prices on two 15-ton monorail hoists, has asked for quotations on a 15-ton, 46-ft. span, 1-motor, overhead crane. Among current locomotive crane inquiries is one from the Canadian National Railways, Montreal, for one 20-ton and one 25-ton locomotive cranes. A Southern railroad has closed on a 10-ton, 35-ft. span, 3-motor and a 5-ton, 31-ft. span, 1-motor overhead crane with a builder in the East.

Business has been quiet in the Pittsburgh district. The West Penn Power Co. is inquiring for a 125-ton trolley, a 100-ton bridge and a 25-ton overhead crane and is expected to place the business in a few days. The Pressed Steel Car Co. is in the market for several light duty hoists for McKees Rocks, Pa.

In the New England district the Edison Electric Illuminating Co. has purchased its crane for Boston but has not yet awarded one for its Framingham, Mass. plant. The Bureau of Yards and Docks, Navy Department, Washington, is taking bids for repairs on a 40-ton crane at the dry dock, Boston.

Among recent purchases are:

Phoenix Utility Co., 71 Broadway, New York, a 25-ton, 38-ft. span, 1-motor, overhead crane from Alfred Box & Co.

United States Cast Iron Pipe & Foundry Co., Burlington, N. J., five 5-ton, 50-ft. span, two 5-ton, 45-ft. span and one 5-ton, 15-ft. span, all 3-motor overhead cranes and a 5-ton hand power crane from the Niles-Bement-Pond Co.

City of Detroit, Mich., one 100-ton, 80-ft. span overhead crane and a bucket handling crane, 2½-cu. yd. capacity, from the Whiting Corporation.

De Negril Brothers, Barretto Street, Hunts Point, New York, a 5-ton, floor control overhead crane from an unnamed builder.

United Fruit Co., New York, a 10-ton, 46-ft. span crane bridge from an Eastern builder.

Carnegie Steel Co., Pittsburgh, two 30-ton, double hook, electric cranes for Duquesne, Pa., from the Alliance Machine Co.

Edison Electric Illuminating Co., Boston, a 10-ton electric overhead crane for the Boston plant, from the Northern Engineering Works.

The Public Service Electric & Gas Corporation, Terminal Building, Newark, is arranging a sale of preferred stock to total \$5,000,000, the proceeds to be used for extensions in power plants and system.

The G. A. Schacht Motor Truck Co., Cincinnati, has arranged for a new factory branch and service works at 400 New Street, Newark, including parts and repair departments.

The Ken-Lin Radio Corporation, 122 South Broad Street, Trenton, N. J., has been incorporated with \$100,000 capital stock to manufacture radio equipment and parts. Abraham Abrahams is one of the officials.

The Furnell Mfg. Corporation, Newark, N. J., incorporated with \$100,000 capital stock, will manufacture condensers. It has taken a factory at 24 Scott Street, Newark, and offices at 889 Broad Street. The company expects later to expand its line. Ralph M. Beach is president and C. W. Headley is secretary-treasurer.

The Keiner Metal Forging Co., 8746-82 123d Street, Richmond Hill, N. Y., has been organized to manufacture press forging brass, copper, duralumin and steel. The building and equipment have been provided. Output includes forgings up to 3 lb. Henry A. Keiner, president, has been in this line since 1883. Harry C. Keiner is secretary-treasurer and W. H. Klocke, who has been connected with the E. W. Bliss Co. for the past 15 years as chief engineer, is vice-president and manager. The company is a subsidiary of the Keiner Williams Stamping Co.

The Arco Vacuum Corporation, 40 West Fortieth Street, New York, has been incorporated with \$1,000,000 capital stock to acquire the business of the vacuum cleaner division, American Radiator Co. The Arco corporation owns a plant at Rockford, Ill., which is now operating at capacity. Plans are being worked out for the production of other specialties. Randolph Santini is president; Seth Barham, vice-president and treasurer, and Wetmore Hodges, secretary.

The Laughlin Filter Corporation, 120 Broadway, New York, organized with \$115,000 capital stock, will manufacture filtration machinery and equipment, specializing in centrifugal filters. It plans to erect a building for assembling, but manufacturing will be done by contract. T. J. Broidrick is vice-president and secretary.

Buffalo

BUFFALO, May 4.

THE Rand-Kardex Co., Inc., Tonawanda, N. Y., manufacturer of card-filing equipment and devices, comprising a recent consolidation of the Rand Co., Inc., and the Kardex Co., both with local factories, has closed negotiations for the purchase of the former plant of the Herschell-Spillman Co., Tonawanda, previously given over to the manufacture of gasoline motors, etc. It consists of a main four-story building, totaling about 250,000 sq. ft. of floor space, and will be used by the purchasing company for a new plant. James H. Rand, Jr., is president.

The American Locomotive Co., 30 Church Street, New

York, has plans for additions to its shops at Dunkirk, N. Y. R. H. White is company engineer, located at the Schenectady, N. Y., works.

The Beaverland Corporation, Lowville, N. Y., manufacturer of milk bottle caps, etc., has plans for a two-story addition, 55 x 105 ft., to cost \$42,000.

The McManus Steel Construction Co., Ferry and Leslie Streets, Buffalo, is arranging for a new template shop.

The Oswego Falls Corporation, Fulton, N. Y., manufacturer of paper containers, etc., has work in progress on a two-story and basement structure, 90 x 120 ft., and one-story building, 82 x 120 ft., for which a contract recently was let to the H. K. Ferguson Co., 4900 Euclid Avenue, Cleveland.

The American Laundry Machinery Co., Buffalo Road, Rochester, N. Y., has awarded a general contract to the Ferro Concrete Construction Co., Cincinnati, for a three-story addition, 120 x 150 ft., to cost approximately \$80,000. Headquarters of the company are at Norwood Station, Cincinnati.

W. N. Denler, 519 Glenwood Avenue, Buffalo, operating a sheet metal roofing works, plans the erection of a new one-story shop, 38 x 80 ft.

The Henbusch Co., 656 Genesee Street, Buffalo, manufacturer of metal products, will erect a one-story addition to cost about \$20,000 with equipment.

The Herald Furniture Corporation, Jamestown, N. Y., recently incorporated, has acquired a site at Falconer, and will shortly place contract for a one-story factory containing 25,000 sq. ft. of floor space for the manufacture of chairs. Woodworking machinery and power plant equipment will be required. Marvin Anderson is secretary and general manager.

Philadelphia

PHILADELPHIA, May 4.

CONTRACT has been let by the Heints Mfg. Co., Front and Olney Streets, Philadelphia, manufacturer of pressed steel automobile bodies, to the William F. Newberry Co. for a one-story addition to cost \$40,000.

The Philadelphia & Reading Railway Co., Philadelphia, is said to be arranging an appropriation of \$3,000,000 for further extensions and improvements in its locomotive and car shops at Reading, Pa.

The O'Brien Cooperage Co., Wharton and Water Streets, Philadelphia, has plans for a two-story addition, 60 x 190 ft., to cost \$45,000 with equipment. O. E. Oelschlaeger, 1615 Walnut Street, is architect.

The Cattle Brothers Corporation, 1712 North Ninth Street, Philadelphia, operating a metal-working and galvanizing plant, has purchased property, 100 x 215 ft., at Tloga and Witte Streets, for a new one-story plant estimated to cost \$75,000. Plans are being drawn by Carson,

& Carson, 22 South Fifteenth Street, architects and engineers.

The Ford Motor Co., Detroit, has authorized the immediate erection of its proposed assembly plant on the site of the former yard of the Merchant Shipbuilding Co., Chester, Pa., and expects to have the works ready before the close of the year. The company will abandon its ten-story factory branch on North Broad Street, Philadelphia, and will remove to the Chester works.

The Southern Coal & Iron Corporation, 1414 South Penn Square, Philadelphia, will erect a concentrating plant at its mining properties at Rittenhouse Gap, Pa., to develop a capacity of about 500 tons per day.

The Security Bank Note Co., 223 Chestnut Street, Philadelphia, manufacturer of paper products, is completing plans for a new factory to cost \$150,000. Clarence E. Wunder, 1520 Locust Street, is architect.

The Board of Commissioners, Lower Merion Township, Ardmore, Pa., is asking bids until May 14 for one pump, electric motor and accessories for the Mill Creek sewage pumping station. Albright & Mebus, 1502 Locust Street, are architects. G. C. Anderson is secretary of the board.

The Commissioner of Public Works, Camden, N. J., is planning for the electrification of the Norris water station of the municipal waterworks, including the installation of motor-driven pumping apparatus and accessory equipment to replace present steam-operated machinery.

The Circle F Mfg. Co., Monmouth Street and Culbertson Avenue, Trenton, N. J. manufacturer of electric wiring devices and equipment, has awarded a contract to William C. Ehret, 13 West State Street, for a five-story addition, 40 x 100 ft., to cost \$100,000 with equipment. An adjoining building, three stories, 50 x 90 ft., will also be erected. It recently succeeded to the plant and business of the E. H. Freeman Electric Co., Trenton.

Manual training equipment will be installed in the two-story junior high school to be erected on Cooperstown Road, Brookline, Pa., estimated to cost \$220,000, for which plans are being drawn by Boyd, Abel & Gugert, Otis Building, Philadelphia, architects.

The Harleigh Coal Co., Mahanoy Plane, Pa., operating the former local properties of the Harleigh-Brookwood Coal Co., has work in progress on a new washery and plans the early installation of machinery.

Minot Hill, Bristol, Pa., and associates have acquired the former plant of the Vulcan Iron Works, Chester, Pa., from the Delaware County Trust Co., which has been holding the property, for \$150,000. The new owners have tentative plans for the establishment of new works on the site and will modernize the structures and equipment.

The Board of Education, Gettysburg, Pa., is considering the installation of manual training equipment in a proposed high school estimated to cost \$100,000, for which bids will soon be asked on a general contract. B. E. Starr, Harrisburg, Pa., is architect.

New interests have acquired the plant of the Paul E. Wirt Pen Co., Bloomsburg, Pa., manufacturer of fountain pens, headed by Robert H. Knorr and Boyd F. Maize, formerly connected with the company. Plans are under way for extensions and the installation of additional equipment.

The Perry, Buxton, Doane Co., Pennsylvania Building, Philadelphia, is in the market for 2 and 3-in. seamless steel marine tubes.

The Aberdeen Specialty Co., Inc., 1640-42 North Hutchinson Street, Philadelphia, recently incorporated with \$35,000 capital stock, has a fully equipped plant for manufacturing radio products. S. M. Siegel is one of the executives.

Detroit

DETROIT, May 4.

THE AC Spark Plug Co., Industrial Avenue, Flint, Mich., has purchased a factory formerly occupied by the Dort Motor Car Co., totaling about 216,000 sq. ft. of floor space. It will be used by the new owner for the manufacture of fuel lamps, air cleaners and kindred products. The production of spark plugs and speedometers will be continued at the Industrial Avenue works.

The Moynahan & Duchene Metal Works, Inc., 2658 Porter Avenue, Detroit, is said to have preliminary plans for a two-story addition. J. F. Moynahan is president.

The Stromberg Motor Devices Co., 2739 Woodward Avenue, Detroit, has awarded a general contract to the W. E. Wood Co., Ford Building, for its two-story service and repair building, 50 x 163 ft., to cost approximately \$40,000.

The Flint Malleable Castings Co., Flint, Mich., recently organized, has begun the erection of a new foundry, de-

signed to give employment to about 200. It will have an initial output of about 10,000 tons per annum.

The Grand Haven Brass Foundry, Grand Haven, Mich., is completing plans for a one-story addition.

Work will begin on the proposed additions to the plant of the Fenton Machine Tool & Die Co., Fenton, Mich., to be of sawtooth type, 120 x 160 ft. Contract was let recently to the H. K. Ferguson Co., Cleveland.

The R. J. Tower Iron Works, Greenville, Mich., has acquired the plant and business of the Taplin Furnace Co., Grand Rapids, Mich., and will consolidate with its organization. It is understood that the Grand Rapids plant will be continued as a branch.

The Marks-Fiske-Zeigler Co., South and Rademacher Streets, Detroit, iron and steel products, has acquired the plant on Artillery Avenue, fronting on the lines of the Michigan Central and Wabash railroads, formerly occupied by the Motor City Stamping Co. The structure approximates 15,000 sq. ft. of floor space, and will be remodeled as a storage and distributing plant for steel sheets, terne plate, strip steel and kindred products. An addition will be obtained to bring the available floor space to about 40,000 sq. ft.

Work has begun on a one-story addition at the plant of the Owosso Boiler & Welding Works, Owosso, Mich., reported to cost about \$25,000.

The Benton Harbor Malleable Iron Co., Benton Harbor, Mich., will be reorganized to take over the business of the General Die Casting & Machinery Co., Chicago, which will be moved to a plant, 50 x 80 ft., to be erected on Graham Avenue at Benton Harbor.

C. A. Reynolds, 318 Dryden Building, Flint, Mich., is in the market for foundry equipment, including Osborn molding machines, types 74-J and 75-J, an air compressor with tank, snap flasks and bands, exhaust tumbling barrels, core ovens and sand mixer, core plates, grinders, ladles, resin mill and press.

The Specialty Mfg. Co., Jackson, Mich., recently organized, is manufacturing under contract a tappet valve for automobiles and trucks. In the near future it expects to establish a plant of its own. G. H. Bigelow is director of sales.

New England

BOSTON, May 4.

BUSINESS in machine tools is still confined to an occasional sale, with used machinery given the preference. Sales of new tools the past week, included an axle lathe and a car wheel boring machine, a Worcester-made 16-in. lathe and a fairly large layout of bench equipment. In used tools there is nothing significant in individual purchases or the class of equipment. Total transactions, however, foot up a little heavier, but competition for business is keener than ever and the net return, if anything, is smaller than heretofore. Among new inquiries, a hammer and two punches from a Worcester company and a planer with 36-ft. bed from a local shop are the most important. Dealers are working on a sizable list of quotations already made, which in some instances have progressed to the point where verbal promises of purchases have been given.

Small tools are selling well, and out of proportion to machine tools. In the past heavy sales of small tools usually foreshadowed a buying of large tools. Some local houses report April sales the largest for any month since 1923.

The Turner Falls Power & Electric Co., 387 Main Street, Springfield, Mass., will rebuild its coal trestle at Chicopee. Plans are private.

Bids have closed for a one-story, 100 x 100 ft., car repair shop at Waterville, Me., contemplated by the Maine Central Railroad. B. T. Wheeler, Portland Terminal, Portland, is engineer.

The Lowell Electric Light Corporation, 29 Market Street, Lowell, Mass., has plans for extensions in its power house and the installation of additional equipment. Stone & Webster, Inc., 47 Milk Street, Boston, is engineer.

New estimates will be asked for the proposed addition to be erected by the Clark Brothers Bolt Co., Milldale, Conn. It will be one-story, 46 x 125 ft. Walter T. Arnold, Meriden, Conn., is architect.

Burtis Brown, 65 Franklin Street, Boston, architect and engineer, has awarded contracts for a two-story automobile service, repair and garage building, 114 x 180 ft., at Allston,

to cost \$150,000 with equipment, on which work has begun.

The Bureau of Water Commissioners, Lynn, Mass., is planning for a two-story repair works and automobile service and garage building, 60 x 140 ft., for municipal trucks and cars, estimated to cost \$70,000. R. F. Handy, City Hall, is city architect, in charge.

The International Silver Co., Miller Street, Meriden, Conn., has awarded a general contract to the Immick Co., for an addition, 35 x 40 ft.

The Fraser Companies, Ltd., St. John, N. B., is completing plans for its proposed pulp and paper mills at Madawaska, Me., and expects to begin work during the summer. The plant will consist of several one-story units and cost \$1,000,000 with machinery.

Ovens, power equipment, conveying and other machinery will be installed in the new building to be erected by the Berwick Cake Co., 1125-31 Harrison Avenue, Boston, for which plans have just been filed. It will cost approximately \$200,000.

The Gray Telephone Pay Station Co., Arbor Street, Hartford, Conn., manufacturer of telephone apparatus, has awarded a general contract to the Porteus-Walker Co., 13 Forest Street, for a five-story addition to cost \$170,000 with equipment.

The Y-D Service Garage, Boston, care of L. S. Joslin, 339 Newbury Street, architect, has plans for a three-story service, repair and garage building, 50 x 115 ft., to cost about \$100,000 with equipment.

The Hoague-Sprague Corporation, Lynn, Mass., manufacturer of paper and cardboard boxes and containers, has leased additional space near its factory, totaling 20,000 sq. ft. of floor area, and will install machinery to increase the output about 50 per cent.

The Hood Rubber Co., Watertown, Mass., manufacturer of automobile tires and other rubber goods, has taken out a permit to erect an addition, estimated to cost \$200,000 with machinery.

A. W. Boyle, 39 Center Street, New Haven, Conn., architect, has completed plans for a two-story automobile service, repair and garage building, to cost about \$175,000 with equipment.

Directors of the Stamford Gas & Electric Co., Stamford, Conn., have recommended an increase in capitalization from \$1,000,000 to \$2,000,000, the proceeds to be used in plant improvements and expansion. Alfred W. Dater is president.

The Aldrich Brothers' Co., Moosup, Conn., will erect a factory of sufficient capacity to install 500 cotton looms.

The New Britain Spring Co., 169 Main Street, New Britain, Conn., recently incorporated, will produce small precision coil and torsion springs made from round wire, continuing an establishment in this line. Charles F. Robertson is president.

St. Louis

ST. LOUIS, May 4.

APPPLICATION has been made by the Arkansas Power & Light Co., Pine Bluff, Ark., for permission to construct a hydroelectric generating plant at Colbert Shoals, Ala., to develop a capacity of 100,000 hp. The entire project is estimated to cost \$8,000,000 with transmission system. Ford, Bacon & Davis, 115 Broadway, New York, are engineers.

The Studebaker-Riley Corporation, Twenty-first Street and Grand Avenue, Kansas City, Mo., representative for the Studebaker automobile, has arranged for a three-story and basement L-shaped service, repair and garage building, 85 x 185 ft., and 50 x 56 ft., to cost \$180,000 with equipment.

Electric power, hoisting and conveying equipment, unloading and other machinery will be installed in the grain elevator addition to be erected by the Southwestern Milling Co., Board of Trade Building, Kansas City, Mo., estimated to cost \$350,000. The A. E. Baxter Engineering Co., Ellicott Square, Buffalo, N. Y., is engineer. C. M. Hardenberg is head.

C. E. Norton, city clerk, Ponca City, Okla., is taking bids until May 28 for equipment for extensions in the municipal electric power plant, including one full Diesel engine, about 1250 hp. capacity, and one 850-kw. generator, a. c., 2300 volts, three-phase, 60 cycles.

The Common Council, Marland, Okla., plans the installation of deep-well pumping equipment in connection with a proposed waterworks plant; a steel tower and tank will also be installed. Bonds have been voted.

The Lion Oil Refining Co., El Dorado, Ark., operating a local refinery with capacity of 10,000 bbl. per day, has arranged for a stock issue to total \$1,435,000, a portion of the proceeds to be used for extensions. E. C. Winters is president.

William Dill, Little Rock, Ark., architect, has awarded a general contract to Ault & Burden, West Second Street, for a two-story automobile service, repair and garage building, 80 x 100 ft., at 600 West Capitol Avenue, to cost \$45,000.

The City Council, Norman, Okla., plans the installation of pumping equipment and accessory machinery in connection with a proposed municipal waterworks, estimated to cost \$100,000, in which amount a bond issue is being arranged. F. Cobb, Norman, is engineer.

The Ramsey Accessory Mfg. Co., St. Louis, manufacturer of piston rings and kindred products, has leased a portion of the building at Fifteenth and Carr Streets, and will install equipment for a new plant.

The Chicago & Alton Railroad Co., 340 West Harrison Street, Chicago, has plans for a new grain elevator at East Bottoms, Kansas City, Mo., to include hoisting and conveying machinery, electric power equipment, unloading and other machinery, estimated to cost \$500,000. R. A. Cook is chief engineer.

The Board of Education, Columbia, Mo., has authorized plans for a manual training addition to the Fred Douglass high school for colored children. William B. Ittner, Board of Education Building, St. Louis, is architect.

The Golden Cycle Milling & Reduction Co., Colorado Springs, Colo., has preliminary plans for the construction of a steam power house, with a capacity of 1500 kw., to cost \$75,000. Automatic stoking machinery and equipment will be required.

Chicago

CHICAGO, May 4.

ANOTHER decline in machine tool sales was registered in the month of April and local merchants who broke even with their expenses feel fortunate. As May opens, however, there is every prospect that the Burlington, the Illinois Central and the Union Pacific will place orders shortly against their pending lists. The Santa Fe, which has been putting out inquiries from time to time, has made two further additions to its outstanding list, namely, inquiries for a 4000-lb. double frame heavy-type steam hammer and a motor-driven post drill. The Rock Island Lines have entered the market for two woodworking machines: a motor-driven shaftless swing saw and a sash and door clamp. Industrial buying has been at a low ebb, but word comes from Kenosha that the Nash Motors Co. will rearrange its cylinder department and buy additional equipment.

The Hart Oil Burner Co., Peoria, Ill., is in the market for ten turret lathes, six drilling machines, seven engine lathes and two milling machines. The William Ganschow Co., Chicago, has placed an order for a 30-in. x 14-ft. engine lathe and also bought a number of used tools at the sale of the equipment of the Union Drop Forge Co., Chicago. These machines, including three turret lathes, four engine lathes and a milling machine, will be installed in the company's new plant at Peoria, Ill., which will get into operation soon. The Rockford, Ill., Board of Education will hold a meeting May 11 and orders against the extensive school list for that city are expected to be placed by May 15. The Mather Stock Car Co., Chicago, is inquiring for a punch for 1/4-in. rivet holes in 3-in. flange of pan shaped steel diaphragms 1/4-in. thick. The Rockford Brass Co., Rockford, Ill., has closed for two small turret lathes. The National Lock Co., Rockford, and Duner & Co., Chicago, have each placed an order for a turret lathe. The Hall Printing Co., Chicago, recently placed orders for approximately \$40,000 worth of miscellaneous machine tools.

The Delta Star Electric Co., 312-16 North Artesian Avenue, Chicago, has awarded a contract for a one-story factory, 75 x 269 ft., to cost \$84,000.

The Frederick Post Co., manufacturer of drawing materials, 3515 North Hamlin Avenue, Chicago, has awarded a contract for repairing fire damage to its two-story factory, to cost \$18,000.

The Western Architectural Iron Co., 211-233 West Schiller Street, Chicago, is a reincorporation of a company of the same name with the same officers and directors. The capital stock, however, has been increased from \$25,000 to \$100,000. The company manufactures architectural iron and steel casement windows. It has leased 6000 sq. ft. of additional floor space, making a total of 16,000 sq. ft., and has installed new equipment, including arc welders, spot welders and presses. Officers are E. M. Rundgren, president and treasurer; L. C. Case, vice-president; and A. E. Franson secretary.

The Imperial Type Metal Co., 1800 South Fifty-fourth

Street, Cicero, Ill., has awarded a general contract to George P. Cullen, 2940 West Lake Street, for a one-story and basement plant, 60 x 150 ft., to cost \$40,000. F. J. Sardikes, 37 West Van Buren Street, Chicago, is architect.

The Chicago Lock Co., 154 Whiting Street, Chicago, is said to be planning the early purchase of machine tools, hand tools and other equipment.

The Minnehaha Welding & Machine Co., 3750 Minnehaha Avenue, Minneapolis, Minn., has superstructure work in progress on a one-story addition, 50 x 146 ft., estimated to cost \$30,000.

The Shaeffer Pen Co., Front Street, Fort Madison, Iowa, manufacturer of fountain pens, has awarded a general contract to R. R. Banks, Keokuk, Iowa, for extensions in its two and three-story plant, estimated to cost \$60,000.

The Minnesota & Ontario Paper Co., Minneapolis, Minn., is disposing of a bond issue of \$16,000,000, a considerable portion of the proceeds to be used for extensions and the installation of additional equipment. It is also contemplating expansion in its hydroelectric generating plants.

The Minnesota Light & Power Co., 216 West First Street, Duluth, Minn., has preliminary plans for a new hydroelectric generating station on the Mississippi River, near Rice, Minn., to cost in excess of \$1,200,000, including transmission system.

J. R. Morison, 64 West Randolph Street, Chicago, architect, has completed plans for a one-story machine shop and automobile repair plant, 25 x 125 ft., at 5837 South Winchester Street.

The Apollo Piano Co., DeKalb, Ill., has awarded a general contract to Skoglund & Wedburg, 142 Park Avenue, for a one-story addition, 100 x 100 ft., to cost \$75,000. Edward T. Ronworth is president.

The Hinde & Dauch Paper Co., Sandusky, Ohio, manufacturer of corrugated paper boxes and containers, etc., is said to be planning a new three-story and basement factory at Fort Madison, Iowa, to cost \$115,000 with machinery. Sidney Frohman is president.

Paper, Calmenson & Co., 975 East Seventh Street, St. Paul, Minn., are in the market for a sheet squaring shear, motor-driven, with hold-down attachment, front arms and complete gage equipment.

The General Rollers Co., Waukegan, Ill., is in the market for a new plate shear, 4 x 6 ft., capacity, $\frac{1}{2}$ -in. plate.

Pittsburgh

PITTSBURGH, May 4.

THE local machine tool market is still quiet, but the trade is encouraged by a fair demand for repair parts and the number of industrial companies and railroads which are figuring on purchases of new equipment. Both the Pittsburgh & Lake Erie and the Baltimore & Ohio railroads have good sized requirements, but as yet the appropriations have not been voted. Car building companies in this district are operating on a very much reduced scale, but the impression is that the railroads will soon make some extensive purchases.

Contract has been let by the Pittsburgh Piping & Equipment Co., Charlotte and Thirty-fifth Streets, Pittsburgh, to the Hughes-Foulkrod Co., Stevenson Foster Building, for three one-story buildings, 120 x 300 ft., 70 x 150 ft., and 50 x 220 ft., to cost \$125,000. G. H. Danner is treasurer.

The Bessemer Gas Engine Co., Grove City, Pa., plans the erection of two additions, each one-story, 60 x 180 ft.

The Pierpont Motor Co., 5200 Penn Avenue, Pittsburgh, has awarded a general contract to Conley & DeMey, 127 North Highland Street, for a five-story service, repair and garage building, 130 x 195 ft., to cost \$300,000 with equipment. J. F. McWilliams, 127 North Highland Avenue, is architect. J. H. Pierpont is president.

The Hillman Coal & Coke Co., First National Bank Building, Pittsburgh, has plans for the construction of a new tippie at its Naomi mine, Monongahela River district.

The Board of Education, Uniontown, Pa., plans the installation of manual training equipment in the Lafayette and Benjamin Franklin junior high schools, estimated to cost \$275,000, and \$200,000. Emil R. Johnson and Clarence F. Wilson, associated, and H. W. Altman, all located in the Fayette Title & Trust Building, are the architects.

Fire, April 27, destroyed three tippies at the coal properties of the Gilbert-Davis Coal Co., Morgantown, W. Va., with loss estimated at \$150,000. Plans for rebuilding are under advisement. E. H. Gilbert is president.

The Royal Window Glass Co., Grafton, W. Va., will hold in abeyance plans for rebuilding its works recently

destroyed by fire with loss of about \$350,000, including machinery.

Bids are being asked by the St. Marys Clay Products Co., St. Marys, Pa., for the erection of its plant for the manufacture of fire clay products and kindred specialties, to cost about \$400,000 with machinery. A power house and machine shop are planned.

The City Council, Corry, Pa., is preparing to float a bond issue of \$100,000, the proceeds to be used for the erection of a sewage disposal plant. Electrical pumping and other machinery will be required.

J. C. Morrow, H. H. Robertson Co., First National Bank Building, Pittsburgh, is inquiring for one or two used 200-hp. horizontal water tube boilers, 200-lb. pressure, also one 250-kva., 60-cycle, three-phase, a.c. generators, direct connected to steam engine operating at 200-lb. steam pressure.

Milwaukee

MILWAUKEE, May 4.

FAVORABLE conditions continue in the foundry and machine shop trades. The call for machine tools is only fair, but some improvement is reflected by a little better inquiry, usually for single items. Structural shops, as a rule, are well sold up for two to three months with a small number of sizable jobs and a considerable quantity of small work that aggregates well. Foundries supplying automotive industries are generally working at capacity.

Edward Helmke, 802 South Eighth Avenue, Wausau, Wis., is organizing a new foundry and machine shop corporation to fill the vacancy caused by the recent retirement of the Wausau Foundry & Machine Works and liquidation of its assets to settle an estate. Plans have been ordered from the Wausau Iron Works, structural fabricator and general contractor, for a brick and steel plant. Inquiry is being made for a cupola, lathe, milling machine, planer, tool grinder, all motor-driven, and a 5-ton electric crane with ground control.

Monarch Industries, Inc., Elkhart, Ind., a recent consolidation of affiliated interests, is planning to enlarge the works of the Monarch Tractors, Inc., Watertown, Wis., and convert it into a productive center, establishing assembly plants in various other sections. This will require additional machinery installations at Watertown, but details are not yet available. E. B. Cadwell is president, and W. H. Foster, vice-president and general manager of the Watertown plant.

The Wausau Motor Parts Co., Wausau, Wis., manufacturer of piston rings exclusively, contemplates the erection of an addition. The company moved to Wausau from Menominee, Mich., 18 months ago and is occupying the old city hall building, which has been outgrown. It is producing 300 sizes of piston rings in diameters of 1 to 10 in. for air compressors, ice and refrigeration machines, stationary engines, regulating valves, aircraft engines, etc. E. H. Vile is general manager, and Sigfried Johnson, treasurer and works manager.

M. Andis, 417 Lake Avenue, Racine, Wis., has let the general contract to A. C. Kappel, builder, 526 Wisconsin Street, for a two-story brick and concrete plant, 116 x 120 ft., to be occupied jointly by the Andis Mfg. Co. and the Reid Clipper Co., manufacturing motor-driven hair clippers, shears and similar appliances. Considerable new equipment is to be added. The architect is A. L. Flegel, Racine.

The Smith & Ferguson Co., Richland Center, Wis., has been organized to manufacture machinery and do custom machine work. A plant has been leased and most of the equipment has been acquired. LeVerne Smith, formerly in the machine shop business at West Salem, Wis., is general manager.

The Fort Atkinson, Wis., Chamber of Commerce has purchased for \$50,000 the plant of the defunct Northwestern Mfg. Co., furniture, for resale to the Bower City Millwork Co., Janesville, Wis., which intends to relocate its operation about June 1. Changes will be made in buildings and equipment. C. E. Ward, Paul C. Burchard and Henry Hartman are trustees for the Chamber of Commerce.

The Blue Point Tool Works, Sattley Building, Racine, Wis., established about six months ago to manufacture electro-plating units and special tools, has incorporated as the Blue Point Tool Co., with a capital consisting of \$35,000 preferred and \$50,000 common stock. The present facilities are to undergo material enlargement at once. The officers, all Chicago residents, are Stanton Palmer, president; N. E. Tarble, vice-president; G. A. Rhenberg, secretary, and J. J. Johnson, treasurer.



THIS rectangular pickling tank, contrary to regular practice, was shipped set-up, though it measures 43 ft. long, 7 ft. 4 in. wide and 4 ft. 4 in. deep, weighs $8\frac{1}{2}$ tons and required a 61-ft. flat car for shipment. Yellow pine, 90 per cent heart stock, was used in its construction, the timbers being of 8-in. stock. The tank is to contain sulphuric acid, and the rodding and bracing is on the outside rather than through the timbers, an arrangement intended to eliminate the use of the more expensive acid-resisting metals. The tank was built for the Champion Spark Plug Co., Toledo, Ohio, by the Kalamazoo Tank & Silo Co., Kalamazoo, Mich.

The Coakley Brothers Co., 41-45 Second Street, Milwaukee, will build a general storage and transfer warehouse, 160 x 223 x 117 ft., six stories and basement, at North and Prospect Avenues, and has let the general contract to W. W. Oefflein, Inc., 86 Michigan Street, Milwaukee. Specifications for conveyors, steel racks, bins, fixtures and other equipment are being prepared by George S. Kingsley, architect and engineer, 109 North Dearborn Street, Chicago.

The Felker Brothers Mfg. Co., Marshfield, Wis., manufacturer of storage tanks, truck tanks, tank heaters and similar sheet and plate products, is taking bids for a one-story brick and steel addition, 67 x 100 ft., designed by G. A. Krasin, local architect. New equipment will include a 5-ton electric traveling crane, ground operated, punches, presses, riveting and welding machines. A. G. Felker is president and general manager.

Cleveland

CLEVELAND, May 4.

THE local machine tool market shows considerable improvement. In addition to a gain in domestic business, considerable export trade is coming out in automatic screw machines from England, Germany, France and Italy. From the latter country an order has been placed by the Fiat Motor Co. with a Cleveland manufacturer for 30 automatic machines which, with other export orders received by the same company during April, makes an aggregate of 50 machines. This manufacturer also booked a number of domestic orders, some in lots of four or five. A local manufacturer of turret lathes reports an improvement in sales and states that his April business was larger than in any month for over a year. While business was well scattered, a large share came either directly or indirectly from the automotive industry. Several machine tool manufacturers report an improvement in inquiry and look for a good volume of orders this month.

Business with Cleveland dealers continues quiet, with orders mostly for single machines. Aggregate sales in April were about the same as in March. The city of Cleveland, which has taken bids on four metal-working machines, is inquiring for a universal woodworking machine with 33 in. band saw, 8 in. joiner, shaper, boring attachment, saw table, grinder and lathe. The Wellman-Seaver-Morgan Co., Cleveland, has taken a contract for auxiliary equipment for a tube mill placed by the Youngstown Sheet & Tube Co. with a German manufacturer.

The Mueller Electric Co., 1593 East Thirty-first Street, Cleveland, has completed plans for a one-story addition,

65 x 67 ft., to its factory. The George S. Rider Co. is structural engineer.

The Ohio Forge Co., 2955 East Ninety-second Street, Cleveland, has had plans prepared for a 60 x 71 ft. extension at an estimated cost of \$40,000.

The Spitzer Paper Box Co., 3951 Munroe Avenue, Toledo, will build a one and two story and basement factory and office building, 35 x 119 ft. The general contract has been awarded to H. J. Spieker & Co., Toledo.

The city of Ashland, Ohio, has awarded contract for a \$350,000 high school, for which manual training equipment will be required.

C. H. Hulme, 1924 East 105th Street, Cleveland, is inquiring for an adjustable rail plain miller, a 30-in. x 120-in. Landis plain grinder, two No. 16 Blanchard surface grinders, a 10 ft. x 10 ft. x 25 ft. Pond planer with four heads, three No. 2B Kearney & Trecker horizontal plain millers, two No. 3 Cincinnati vertical millers, and three No. 60 and 60G. B. & S. automatics.

The Salem Pressed Steel Co., Inc., Salem, Ohio, has been incorporated to manufacture mechanical toys. T. M. Vaughan is one of the principals.

Cincinnati

CINCINNATI, May 4.

ALTHOUGH some machine tool builders report a slight increase in sales, business in the local market continues quiet. April turned out to be an exceptionally poor month with actual sales far below the total attained during March. The outlook is not encouraging. Buying of equipment by automobile manufacturers is at a minimum. Railroad lists now out are not large and little business has been placed by carriers. Sales of heavy machines have decreased, but some manufacturers report improvement in the movement of small tools and machines. Conditions are spotty with scattered orders being received for single machines.

The Cincinnati Planer Co. sold a 48-in. planer to the American Can Co. for installation in its Cincinnati plant. Production of planers has lessened in the past month. Milling machine sales are fair, but manufacturers have not been reaching the volume of production hoped for. Several sales of boring mills and of radial drills were reported locally the past week. Orders for lathes have been spotty. Electrical tool manufacturers report a decrease in demand the past week. Used machinery dealers did a fair business during April.

The Superior Rock Asphalt Co. of Kentucky will erect an office building and plant at Bowling Green, Ky., and will construct a branch railroad from its mines in Logan

County, Ky., to the Louisville & Nashville station at Auburn. The company is capitalized at \$1,500,000 and is composed of a group of Buffalo financiers. Construction work will start in September. M. M. Logan, Bowling Green, is attorney for the company.

The warehouse and machine shop of the Bishopric Mfg. Co., Spring Grove Avenue and Estes Street, Cincinnati, were destroyed by fire recently with a loss of \$125,000. It is planned to rebuild.

The Superior Gas Engine Co., Sheridan Avenue, Springfield, Ohio, has begun the erection of a machine shop to cost about \$40,000. It is expected to be ready for occupancy July 15.

The Ralston Steel Car Co., Columbus, Ohio, will begin shortly the construction of an addition to its erection shop and the building of new wheel and axle shops.

The Boxill-Bruel Carbon Brush Co., Indianapolis, Ind., will move its plant to Miami Fort, Ohio, a few miles west of Cincinnati, and erect a one-story building, 53 x 103 ft.

The Ornamental Iron & Wire Works, Dayton, Ohio, began operation May 1 at 16 North Canal Street. It will handle ornamental iron work, railings, window guards and light structural wire work. Otto M. Buehner is president.

The Delco-Light Co., Dayton, Ohio, has an expansion program for its department manufacturing electric-operated refrigerators for domestic use, known as the Frigidaire, and will double, approximately, the present capacity.

The Ashland Culvert Works, Inc., Ashland, Ky., manufacturer of corrugated iron culverts, flumes, etc., will install additional equipment for increase in output. E. H. Wuerdeman is manager.

The Virginia Woodworking Co., Inc., William Street, Bristol, Va.-Tenn., will make extensions in its plant to cost approximately \$75,000, including a new one-story mill and installation of electric-operated machinery.

The Dempster Construction Co., Knoxville, Tenn., has inquiries out for two shovels, crawler type, each about 1½ to 1¾-yd. capacity.

The N. O. Nelson Mfg. Co., 928 Chestnut Street, St. Louis, manufacturer of plumbing equipment and supplies, has awarded a general contract to the Este-Williams-Ragsdale Co., Madison Avenue Building, Memphis, Tenn., for a branch plant on Linden Avenue, Memphis, to cost approximately \$175,000. Jones & Furlinger, Prætorian Building, are architects.

Indiana

INDIANAPOLIS, May 4.

JOHAN SHAFER, Odd Fellows' Building, Indianapolis, engineer, representing a group of power interests, has applied for permission to construct a hydroelectric power plant on the Current River, Ripley and Carter Counties, Mo., comprising power dams and machinery to cost \$400,000 with transmission system.

Fire, April 28, destroyed a portion of the plant of the Leonard Range Co., Washington, Ind., with loss estimated at \$30,000 including equipment. Plans for rebuilding have not as yet been announced.

Bids will be asked about May 15 by the Terre Haute, Indianapolis & Eastern Traction Co., Tribune Building, Terre Haute, Ind., for its one-story car barns, machine and repair shops to cost about \$200,000 to replace structures destroyed by fire several months ago. The Shourds-Stoner Co., Tribune Building, are architects.

Fire, April 25, destroyed the plant of the DeKalb Furniture Mfg. Co., Fort Wayne, Ind., with loss estimated at \$75,000 including equipment. It is planned to rebuild.

Paul Hood, 113 West Sixth Street, Gary, Ind., has leased and will operate a new automobile service, repair and garage building to be erected at Fifth Street and Massachusetts Avenue estimated to cost \$150,000 with equipment. Ivar Viehe Naess & Co., 400 North Michigan Avenue, Chicago, are architects.

Louis De Fabis, Indianapolis, has leased property at 604 South East Street and will operate a sheet-metal works.

The Indiana Power Co., Vincennes, Ind., is disposing of a note issue of \$1,000,000, a portion of the proceeds to be used for extensions in power plants and system.

The Berryhill Malleable Iron Co., Evansville, Ind., recently organized, has foundations in progress for its one-story foundry estimated to cost \$100,000 with equipment.

The Auto Parts Co., Indianapolis, has taken out a permit to erect a new one-story plant at 1125 Massachusetts Avenue.

South Atlantic States

BALTIMORE, May 4.

THE Baltimore Valve Co., Baltimore, has been formed to take over the plant and property of a previous organization of the same name on Sinclair Lane, recently under the direction of Ridgeley Sappington, trustee in bankruptcy. The new company plans improvements and will resume production at an early date.

The chief signal officer, United States Army, Washington, is asking bids until May 16 for eight motor-generators, proposal C. P. 20620-3-A.

Fire, April 27, destroyed a portion of the lumber and woodworking plant of the Montague Mfg. Co., Richmond, Va., with a loss estimated at \$250,000 including equipment.

R. W. Catlin, city manager, Bedford, Va., is completing plans for a municipal hydroelectric development, the installation to include a 450-hp. waterwheel, two electric generators, 300 and 435 kva. respectively, auxiliary 300-hp. waterwheel, motor-driven waste gate and hoist, motor-driven head gate and hoist, governors, transformers and auxiliary equipment. It is also planned to purchase a 20-ton traveling crane. William C. Whitner & Co., Richmond, Va., are engineers.

Thomas Mullen, 3945 Greenmount Avenue, Baltimore, has plans for a one-story automobile service, repair and garage building, 200 x 250 ft., estimated to cost \$175,000 with equipment.

Lazote, Inc., Wilmington, Del., recently formed as a subsidiary of E. I. du Pont de Nemours & Co., has acquired property at Charleston, W. Va., as a site for a plant to manufacture synthetic ammonia and kindred products, reported to cost close to \$500,000 with machinery. The works will include a power house and machine shop.

The Roanoke Rapids Power Co., Roanoke Rapids, N. C., has tentative plans for a new hydroelectric power station with initial capacity of about 25,000 hp.

The Hackley-Morrison Co., Inc., 1708 Lewis Street, Richmond, Va., has inquiries out for a bridge crane, single I-beam type, hand-operated trolley and bridge, with floor-controlled electric hoist, 2 to 3-ton capacity, crane span 22 ft. 10 in.; also, for a crawler type crane, 40-ft. boom, with a ¾-yd. capacity dragline bucket, and for one 250-kw. alternator, direct-connected to automatic steam engine, complete with exciter, switchboard and accessories; alternator to be three-phase, 60-cycle, 220 volts.

The Yarbrough & Bellinger Co., 300 South Graham Street, Charlotte, N. C., operating ice-manufacturing and cold storage plants, has plans for a new branch ice-manufacturing plant in North Charlotte to cost \$80,000 with equipment. It also purposes to build an addition to its ice plant on East Fourth Street to cost approximately \$150,000 with machinery. J. A. Yarbrough is president.

The general purchasing officer, Panama Canal, Washington, is asking bids until May 18 for an electric muffle furnace, steel ties and channels, range boilers, carbon brushes, etc., Panama circular 1667.

The Spedden Shipbuilding Co., Inc., Baltimore, recently formed with a capital of \$50,000, and 1000 shares of common stock, no par value, has acquired the plant of the former company of the same name at Boston Avenue and Kenwood Street. The new organization will continue the operation of the yard and contemplates extensions. It is headed by Howard M. Addison, Enos S. Stockbridge and William Lentz.

John D. Westbrook, Inc., 1104 East Water Street, Norfolk, Va., has inquiries out for a 300-hp. high speed Corliss engine, automatic slide or four-valve.

The Broad River Power Co., Columbia, S. C., has acquired the plants and property of the Johnston Electric Light & Ice Co., Johnston, S. C., and B. J. Day, Jr., Trenton, S. C. Plans are under consideration for extensions and the installation of additional equipment. The company is now building an electric generating plant at Parr Shoals, S. C.

Haley, Chisholm & Morris, National Bank Building, Charlottesville, Va., general contractors, are planning for the early purchase of two traveling cranes about 10 and 15-ton capacity respectively; two 2-ton jib cranes, monorail hoists; locomotive hoist of about 300 tons capacity, shafting, pulleys, hangers and other transmission equipment; pumps, oil tanks, ash-handling equipment; pit jacks and auxiliary power equipment.

The Georgia Railway & Power Co., Atlanta, Ga., has arranged a preferred stock issue of \$4,000,000, a portion of the proceeds to be used for extensions. It has work under way on three new hydroelectric power developments on the Tallulah and Tugalo Rivers to total in excess of 50,000 hp.

The Atlantic Coast Line Railroad Co., Wilmington, N. C., is said to be planning for extensions in its shops at Waycross, Ga., including an addition to the wheel foundry, woodworking and electric shops, and the installation of a pumping plant. The complete program will cost \$400,000. J. E. Willoughby is chief engineer.

Pacific Coast

SAN FRANCISCO, April 29.

WORK will begin on a three-story plant, 120 x 120 ft., for the American Meter Co., 1122 Harrison Street, San Francisco, to cost \$150,000 with equipment. Contract for erection was let recently to George Wagner, Inc., 181 South Park Street.

The Merced Irrigation District, Merced, Cal., is asking bids until June 2 for equipment for its Exchequer dam and power plant project, including gate operating gearing, cast steel bearing plates, cast steel gears and racks, two motor-driven gate operating cars, one centrifugal pump, one traveling crane, one high pressure oil-pumping system, and other equipment. H. P. Sargent, Barcroft Building, is secretary.

The Ira F. Powers Furniture Co., Portland, Ore., has plans in preparation for a five-story factory, 100 x 200 ft., to cost \$250,000 with machinery. Claussen & Claussen, Macleay Building, are architects.

The Northwest Lime Co., Seattle, is completing plans for a new works on Orcas Island, San Juan Islands, near Seattle, to cost about \$250,000 with machinery. The installation will include quarrying equipment, rotary kilns, hydrating apparatus, crushing and conveying machinery, etc.

The Bodinson Mfg. Co., 11 Minna Street, San Francisco, manufacturer of machinery and parts, has plans for a two-story factory on San Bruno Avenue to cost \$17,000. Frank A. Johnson is company engineer.

The Board of Education, San Diego, Cal., has plans for a one-story manual training building at the Woodrow Wilson high school to cost about \$40,000. T. C. Kistner, Spreckels Building, is architect.

The Los Angeles Screen Co., 314 West Fifty-eighth Street, Los Angeles, will erect a two-story addition, 112 x 120 ft., to cost \$25,000. Noice & Merrill, Los Angeles, are architects.

Manual training equipment will be installed in the proposed new school to be erected by the Brawley High School District, Brawley, Cal., estimated to cost \$170,000. G. E. Wilson, 646 West Ninth Street, Riverside, Cal., is architect.

The Puget Sound Sawmill & Shingle Co., South Bellingham, Wash., has tentative plans for rebuilding the portion of its mill destroyed by fire April 11 with loss reported at \$200,000 including equipment.

The Palo Verdes Irrigation District, Blythe, Cal., plans the installation of pumping machinery, electric power equipment and accessory apparatus in connection with an irrigation system estimated to cost \$325,000.

The Great Northern Railway Co., St. Paul, Minn., is completing plans for the electrification of its road through the Cascade Mountain district, Washington, about 30 miles, estimated to cost \$1,300,000.

The Pan-American Petroleum Co., Spring Arcade Building, Los Angeles, has acquired property, 100 x 200 ft., at Van Nuys, Cal., and plans the construction of a new storage and distributing plant to cost about \$35,000 with equipment.

Arrangements are being completed for the erection of a plant at Los Angeles for the manufacture of buses to cost with equipment about \$2,500,000. It will be a unit of the Dorris Motor Car Co., St. Louis. Among local capitalists interested are O. C. Hull, former vice-president of the Kimball Motor Truck Co. and William H. Moore, Los Angeles capitalist. Construction will begin within 90 days.

The Contractors Equipment Co., 1910-1920 Santa Fe Avenue, Los Angeles, incorporated with \$100,000 capital stock, will act as dealer of contractors' equipment. This is the outgrowth of a business formerly operated as a branch of the Edward R. Bacon Co., Seventeenth and Folsom Streets, San Francisco. J. V. Jorgensen is secretary-treasurer.

Canada

TORONTO, May 4.

MACHINE tools sales the past week showed a falling off. A number of inquiries, however, are before the trade and dealers look for some fair sized lists within the next few weeks. The automotive industry is the chief purchaser, but individual orders are mostly for one or two tools. Several large power projects are under way for which equipment has still to be purchased and some good prospects are reported for mining plants in addition to recent sales to northern Ontario points.

The Teck-Hughes Mining Co., Kirkland Lake, Ont., has started work on an addition to its milling plant and will shortly be in the market for equipment.

Preliminary work has been started by Price Brothers, on a pulp and paper mill at Petite Discharge, Que., a short distance from the power development works under way for the Quebec Development Co. The pulp and paper mills will cost approximately \$5,000,000, and will have a capacity of 200 tons per day.

The Foundation Co. of Canada, Ltd., 511 St. Catharine Street, Montreal, has the general contract for a \$2,000,000 addition to the paper mill at Three Rivers, Que., for the St. Lawrence Paper Mills, Ltd., Notre Dame Street. F. O. White, St. Oliver Boulevard, is engineer.

The Montmorency Power Co., Riviere Aux Chiens, Que., is arranging for a \$500,000 power development plant. Camille Lessard, 132 St. Peter Street, Quebec, is chief engineer. The company is in the market for hydraulic and electrical equipment.

The Union Natural Gas Co., Chatham, Ont., plans extensive drilling operations in Dover, Dawn and Tilbury townships, involving an expenditure of \$100,000. It is interested in prices on equipment and piping.

The Oneida Community, Ltd., manufacturer of silverware, Niagara Falls, Ont., will build an addition to its plant at a cost of \$100,000.

The Cunningham Furnace & Machinery Co., Ltd., Sarnia, Ont., has been incorporated to acquire the business of R. H. Cunningham & Co., London, Ont., manufacturer of electric, gas and oil furnaces, machinery and supplies. A branch factory was established at Port Huron, Mich., and the London plant has been moved to Sarnia. M. L. Hall is one of the officials.

Western Canada

The Riverside Iron Works Co., 410 Riverside Boulevard, Calgary, Alta., will build a new foundry to cost \$30,000. Equipment will be purchased. Foster & Ritchie, 2116 Sixteenth Street, West, have the general contract for the building.

The Diamond Body Co., Moose Jaw, Sask., will build an addition to its plant and install considerable new machinery. It proposes to manufacture automobile and truck bodies on a more extensive scale than formerly.

It is reported that the Vancouver Lumber Co., Vancouver, B. C., has been sold to a syndicate of United States capitalists headed by E. J. Young, Madison, Wis. About \$1,000,000 will be expended on new wharves, buildings and machinery to increase the capacity of the plant to handle all classes of export business.

Construction on the new \$2,000,000 pier at Vancouver, B. C., for the Canadian Pacific Railway is well under way. It will be equipped with cargo-handling machinery, including belt conveyors, cranes and automatic gangway elevators.

Gulf States

BIRMINGHAM, May 4.

PLANE are being considered by the Atlanta Plow Co., Atlanta, Ga., for new works at Dallas, Tex., for the manufacture of agricultural equipment to cost \$500,000 with machinery. Clyde L. King is president.

The Medina Irrigation District, Medina, Tex., contemplates the installation of pumping plants in connection with an irrigation project for 43,000 acres in Medina, Bexar and Atascosa Counties estimated to cost \$2,500,000.

The Eshelman Supply Co., Inc., 1431 North Twenty-fifth Street, Birmingham, is desirous of getting in touch with a manufacturer in position to contract for the manufacture of aluminum castings.

The Fort Worth Textile Mills, Inc., Fort Worth, Tex., care of J. R. Griffin, Majestic Building, recently organized, plans the construction of a power house at its proposed

cotton mill estimated to cost \$500,000, for which plans are being drawn by W. G. Clarkson & Co., First National Bank Building, architects.

Fire, April 25, destroyed a portion of the ice manufacturing and cold storage plant of the Lincoln Ice & Cold Storage Co., Ruston, La., with loss estimated at \$60,000 including equipment. It is planned to rebuild.

The Drennen Motor Car Co., 400 South Twentieth Street, Birmingham, plans the erection of a two-story service, repair and garage building to cost \$42,000.

The Harrisburg Pipe & Pipe Bending Co., Harrisburg, Tex., has awarded a general contract to J. B. Townsend, Capitol Street, Houston, Tex., for a new one-story plant to cost \$22,000 with equipment.

The Central Coal & Coke Co., Kansas City, Mo., will rebuild its lumber plant and sawmill at Neame, La., destroyed by fire April 23 with loss estimated at \$125,000 with machinery.

The Dade City Utilities Co., Dade City, Fla., operated by the Tampa Electric Co., Tampa, Fla., will proceed with the erection of a one-story ice manufacturing plant, 50 x 85 ft., adjoining the present station. The installation will include a traveling crane. E. P. Lamb is manager.

The Common Council, Palmetto, Fla., is considering the installation of a municipal electric light and power plant. A bond issue will be arranged.

The Standard Oil Co. of Louisiana, New Orleans, plans the construction of a pipe line from its wells in the Smack-over field, Arkansas, to a point on the Mississippi River in Louisiana, about 100 miles, where connection will be made with a barge line. The project is estimated to cost close to \$1,000,000 with pumping stations and other equipment.

Fire, April 24, destroyed a portion of the mill of the Kirby Lumber Co., Brownell, Tex., with loss estimated at \$350,000 with equipment. It is planned to rebuild. Headquarters of the company are at Houston, Tex.

The Solar Water Heater Co., 504 Congress Building, Miami, Fla., has purchased property in the vicinity of Twenty-fifth Street for the erection of a new plant to cost about \$30,000. A. G. Carruthers is secretary.

The Southern Utilities Co., Miami, Fla., contemplates extensions in its ice-manufacturing plant to increase the capacity from 200 to 350 tons per day estimated to cost \$90,000 with equipment. C. F. Rhoads is local manager.

The Prairie Oil & Gas Co., Wichita Falls, Tex., has acquired the plants and property of the Shamrock Oil Co., same city, including wells and stations in the north Texas section for \$2,000,000. The new owner plans extensions and the installation of additional equipment.

The Peninsular Motors Co., 691-93 Central Avenue, St. Petersburg, Fla., has awarded a general contract to Dillma Wright, St. Petersburg, for a two-story service, repair and garage building, 100 x 120 ft., to cost \$90,000. M. Leo Elliott, St. Petersburg, is architect.

Charles L. Smith, P. O. Box 858, El Paso, Tex., is in the market for a staple-making machine, also equipment for a plant to make galvanized tubs and pails for export to Mexico.

The Mexico Hardware Co., El Paso, Tex., contemplates establishing a plant in Juarez, Mexico, for making galvanized tubs and pails. The duty on these articles was recently raised from 18 centavos a kilo to 30 centavos, or to over 7 cents a lb. American money. Another recent change in Mexican duties includes a reduction on horseshoe nails from 40 centavos to 30 centavos per kilo.

Foreign

THE State Department, La Paz, Republic of Bolivia, plans the construction of locomotive and car repair shops in connection with a new railroad line from Beni River to Sucre, about 100 miles, with turntables, coaling plants, etc. A bond issue of \$3,000,000 has been sold to carry out the project.

The Swedish Chamber of Commerce of the United States, 2 Broadway, New York, has received an inquiry (No. 51) from a company in Sweden desirous of getting in touch with American manufacturers of unbreakable windshields.

The Sao Paulo Tramway Light & Power Co., Sao Paulo, Brazil, is arranging for extensions in its hydroelectric generating plants, totalling about 56,000 kw. capacity. A contract for a portion of the equipment, including water-wheel generators, has been let to the International General Electric Co., New York.

The Foreign Trade Bureau, Philadelphia, has received the following inquiries: (43499) from Alexander N. Matte, P. O. Box No. 129, Mersine, Turkey, desiring to get in touch with American manufacturers of can-making ma-

chinery and woodworking equipment; (43492) from Yamamoto & Co., 643 Joshigaya Takatamachi, Tokyo, Japan, desiring to get in contact with American manufacturers of pumps and pumping machinery; (43457) from Antonio Pamies, Lealtad 90, Havana, Cuba, wishing to get in touch with manufacturers of sugar mill machinery, and (43489) from Pedro Gishi, Bandera 575, Santiago, Chile, wishing to get in contact with American manufacturers of needles for stitching machines.

An issue of \$3,000,000 gold bonds of the Tyrol Hydro-Electric Power Co., Innsbruck, State of Tyrol, is being offered by F. J. Lisman & Co., New York, the proceeds to be used in the development of a super-power installation of 100,000 hp.

Industrial News Notes

Jenkins & Gripe, recently organized by Homer D. Jenkins, representative Baltimore Tube Co. and Mahoning Valley Steel Co., and Elmer Gripe, formerly purchasing agent E-Z-est Way Stove Co., Otis Building, Chicago, will represent the Mahoning Valley Steel Co., manufacturer of steel sheets; Baltimore Tube Co., Inc., manufacturer of sheet brass and bronze, roll and strip copper, bus bar copper, seamless brass and copper tubing, condenser tubes, copper anodes; Ft. Wayne Rolling Mill Corporation, manufacturer of mild steel bands, light angles and channels; Kokomo Spring Co., manufacturer of coiled wire springs; Acorn Lumber Co. and the Western Screw Co., maker of stove bolts, carriage bolts and machine screws.

The American Kardex Co. and the Rand Co., Inc., have been consolidated into the Rand-Kardex Co., manufacturer of metal office equipment, with capitalization of \$10,000,000. James H. Rand, Sr., will be chairman of the board of directors of the consolidation, and James H. Rand, Jr., will be president and general manager.

The William Cramp & Sons Ship & Engine Building Co., Philadelphia, did a fair business in 1924 and, according to President J. Harry Mull, there are excellent prospects of increased business in every department this year. An increased volume of business is looked for by the company's steel foundry. Activity in the brass foundry also is improved. The I. P. Morris department, machinery construction division, has booked considerable new business, including a large contract for three power units to be built in Japan. Among other affiliated interests, the Dominion Engineering Works, Ltd., Montreal, has good bookings and the Pelton Water Wheel Co., hydraulic machinery, operated at full capacity last year. Facilities at the Pelton plant in San Francisco have been enlarged and the company has placed large orders with a South American power company. The De La Vergne Machine Co., specializing in oil engines and refrigerating equipment, reports prospects for working close to capacity in 1925.

The Clark Wilcox Co., 6 Beacon Street, Boston, has been organized as distributor of construction equipment. It acts as factory representative of the Ransome Concrete Machinery Co., the Ligerwood Mfg. Co. and others. F. P. Wilcox is one of the officials.

L. B. Bartlett & Son, Inc., 125 Printery Street, Providence, R. I., has been incorporated to acquire the business of L. B. Bartlett & Son in scrap iron and metals. F. O. Bartlett is one of the principals.

The Trenton Sales Engineering Co., Inc., 20 Joan Terrace, Trenton, N. J., has been organized as distributor of heating and plumbing equipment. George Solz, Jr., is secretary.

The Kuhn-Mayhew Auto Products Co., 196 East Gay Street, Columbus, Ohio, recently incorporated, will act as a distributor of automobile accessories, dealing through dealers. S. C. Mayhew is president.

All of the present officials of the Wheeling Steel Corporation were reelected at a meeting of directors held in Wheeling April 29, as follows: Alexander Glass, chairman; Alan H. Woodward, vice-chairman; Isaac M. Scott, president; Andrew Glass, vice-president and general manager; William H. Abbott, vice-president in charge of sales; C. J. Hunter, secretary; W. H. Manning, treasurer; H. P. Beswick, assistant secretary; T. H. Jones, auditor and assistant treasurer; George P. Whitaker, assistant treasurer. The executive committee is composed of Edwin C. Ewing, J. J. Holway, Chester R. Hubbard, Isaac M. Scott, Albert C. Whitaker, Alan H. Woodward and Alexander Glass, chairman.

The Carbon Products Co., Lancaster, Ohio, has awarded a contract for a recuperative carbonization furnace to the Chapman-Stein Furnace Co., Mt. Vernon, Ohio. The new furnace will be used in the manufacture of carbon electrodes.

The Easy Pan Greasing Machine Co., care of Collier & Collier, 277 Broadway, New York, has been organized to develop patents on a pan greasing machine.

Jacob Brothers, 1240 Seaview Avenue, Bridgeport, Conn., recently incorporated, will continue a business as dealer in scrap iron and steel. The plant and equipment remain as before. William E. Comen will be admitted to the firm as secretary.

Trade Changes

The Mullins Body Corporation, Salem, Ohio, has opened a Detroit office in the General Motors Building, Room 5-139, under the management of Frank J. Burrows, who has been connected for many years with the automotive trade in that territory.

Benjamin Fields, Jr., sales agent in New York for the National Malleable & Steel Castings Co., Cleveland has moved his office from 30 Church Street to 17 East Forty-second Street.

The Standard Steel Car Co. has moved its New York office to 120 Broadway, Rooms 2103-13.

The Forged Steel Wheel Co. has moved its New York offices to 120 Broadway.

The Austin Co., engineer and builder, has moved its New York offices to the Equitable Building, 120 Broadway.

The Standard Inspection Co., inspecting engineer, has moved from 311 Ross Street, to the Jones Law Building, Pittsburgh.

Ownership and good will of the H. A. Rogers Co., 87 Walker Street, New York, railroad, mill and mining supplies, which has been sole agent during the last 55 years for Moncrieff Scotch gage glasses, has passed to the Jenkins Brothers, 80 White Street, New York. The Jenkins company also has offices in Boston, Philadelphia and Chicago. William A. Tucker, who has been associated with the Rogers company since 1880, will be associated with the Jenkins Brothers. The agency for Moncrieff gage glasses will be continued but other lines of the H. A. Rogers Co. will be discontinued.

The Harris Structural Steel Co. has moved its New York office to 1440 Broadway.

The Herbert Kennedy Co., dealer in cast iron pipe and fittings and iron and steel, 32 Broadway, New York, has moved to the Canadian Pacific Building, Thirty-fourth Street and Madison Avenue, New York.

Offices of the H. A. Montgomery Co., manufacturer of metal working compounds for stamping, drawing, shearing, etc., are now located at the factory, 17191 Swift Avenue, Detroit.

The Hess-Schenck Co., dealer in machine tools, 801 St. Clair Avenue, N. E., Cleveland, has moved its office and warehouse into one building at 3863 Hamilton Avenue, Cleveland, where it has warehouse capacity of 22,000 sq. ft.

John L. Key, importer of iron and steel, has moved from 1164 Market Street to Room 416, 22 Battery Street, San Francisco.

The Thomas Spacing Machine Co., Fulton Building, Pittsburgh, has been appointed exclusive manufacturer and selling agent for the Flowers rotary scrap shear, designed by J. C. Flowers, Cornopolis Pa. The shear operates in connection with rotary bevel shear for automatically shearing scrap into short lengths. Mr. Flowers has connected himself with the Thomas company and will supervise the designing and installation of his shear.

The Pennsylvania Pump & Compressor Co., Easton, Pa., has appointed Whitman & Brandt, 705 Bona Allen Building, Atlanta, Ga., as district representative for the Atlanta territory.

The James R. McMann Co., dealer in pipe, valves, fittings, etc., has moved from 60 Gold Street to 120 Liberty Street, New York.

The Perry, Buxton, Doane Co., Pennsylvania Building, Philadelphia, dealer and broker in scrap iron and steel, has appointed the M. W. Landy Co. as its selling agent in the Pittsburgh district, the Landy company having offices in the First National Bank Building, that city.

The Davis Equipment Co. and M. E. Davis, dealers in railroad and construction equipment, who have had offices at 50 Church Street for the past 18 years, will move offices to 8 West Fortieth Street, New York, on May 1.

Rogers, Brown & Co., sellers of pig iron, coke and ferro-alloys, have moved their Chicago office from the nineteenth floor to Room 1501, McCormick Building, Chicago.

The Hess Schenck Co., machinery dealer, Cleveland, will move its offices and wareroom May 1 from 801 St. Clair

Avenue to 2863 Hamilton Avenue, where much larger quarters will be provided.

The H. C. McNair Co., St. Paul, Minn., has been appointed district representative for the Elwell-Parker Electric Co., Cleveland, for St. Paul and surrounding territory.

The Acme Galvanizing & Tinning Co., Wilcox and Roberts Streets, Milwaukee, has changed its name to Acme Galvanizing Co. It maintains a large hot process galvanizing and sherardizing plant under the general management of Irving M. Herrmann, secretary of the corporation. T. F. Brosnahan is president.

Wheelock, Lovejoy & Co., Inc., are moving their New York sales offices from the downtown district, where they have been situated for over a quarter of a century, to the new Pennsylvania Building, 235 West Thirty-fourth Street, on May 1. Edwin P. Gaffney is in charge of district sales.

Industrial Finances

The \$540,000 assets of the Dorris Motor Car Co., St. Louis, were sold at auction April 30 to the highest bidder, H. B. Krenning, for \$115,000. He will reorganize the company and continue the manufacture of motor cars. Mr. Krenning was an organizer of the concern and its president until 1917. The sale was under a court order of Feb. 14, 1924, sustaining a petition of stockholders for voluntary dissolution. Normal employment was 250 men and women.

The Allerton Foundry, Benton Harbor, Mich., has been ordered dissolved by the court upon petition of a majority of stockholders.

All property and equipment of the National Steel Rolling Co., at Pottsville, Schuylkill County, Pa., will be sold at Sheriff's sale at 10 a. m. on May 9.

The Superior Steel Corporation reported a net loss for the first quarter of \$31,399 after charges, contrasted with net income of \$160,038 in the same period of 1924. Current assets as of March 31 were \$2,968,623, against current liabilities of \$246,069, working capital remaining about the same as a year ago. Total surplus remaining after removing the deficit was \$500,658.

The Pierce-Arrow Motor Car Co., Buffalo, showed profits available for dividends, in the first quarter, of \$200,416, as compared with \$78,729 in the first quarter of 1924. Business done in March was the largest for any month since May, 1920, and it is likely that April shipments will be the largest for any month outside of the war period.

The Otis Steel Co. reported net profit for the first quarter of \$223,263 after interest, but before depreciation. This compared with \$174,071 in the corresponding quarter of 1924. The new strip mill is operating and the company's plants are practically at capacity.

Net profits of the Inland Steel Co. for the first quarter were \$1,028,571 after interest and Federal taxes, depreciation, etc., compared with \$2,170,489 in the first quarter of 1924. After dividends there remained a surplus of \$114,321.

Unsecured creditors of the defunct Mitchell Motors Co., Racine, Wis., numbering about 600, will receive 29.7 per cent on their claims, a first and final dividend in this sum having been ordered paid by the referee at a meeting held April 28. Total realization on assets was \$1,322,009, and after paying prior lien and preferred claims, expenses, etc., there remained \$905,000 for distribution among creditors. The Mitchell company went into liquidation on April 18, 1923, and the settlement of its affairs in a few days more than two years' time is considered a record for so large an estate and the realization of unsecured creditors is considerably above earlier expectations.

Assets of the Lena Mfg. Co., Lena, Oconto County, Wis., are being offered for sale by E. J. Brazee, assignee, on May 16. The property includes miscellaneous machine shop equipment, including lathes, shapers, gear hobs, besides material for making electric washing machines, floor lamps, etc.

Application has been granted for the appointment of a receiver for the Barbee Wire & Iron Works, La Fayette, Ind. The application was filed in the Tippecanoe Superior Court by the Crawfordsville Wire & Nail Co., Crawfordsville, Ind.

Julius J. Goetz of Milwaukee has been appointed trustee of the Perdieu Tool Mfg. Co., 521 Sixteenth Avenue, Milwaukee, and is offering the entire assets for sale. The real estate consists of a three-story mill constructed building, 60 x 60 ft.

Current Metal Prices

On Small Lots, Delivered from Merchants' Stocks, New York City

The following quotations are made by New York City warehouses.

As there are many consumers whose requirements are not sufficiently heavy to warrant their placing orders with manufacturers for shipments in carload lots from mills, these prices are given for their convenience.

On a number of items the base price only is given, it being impossible to name every size.

The wholesale prices at which large lots are sold by manufacturers for direct shipment from mills are given in the market reports appearing in a preceding part of THE IRON AGE, under the general headings of "Iron and Steel Markets" and "Non-Ferrous Metals."

Bars, Shapes and Plates

	Per Lb.
Bars:	
Refined iron bars, base price.....	3.24c.
Swedish charcoal iron bars, base.....	7.00c. to 7.25c.
Soft steel bars, base price.....	3.24c.
Hoops, base price.....	4.49c.
Bands, base price.....	3.99c.
Beams and channels, angles and tees, 3 in. x ¼ in. and larger, base.....	3.34c.
Channels, angles and tees under 3 in. x ¼ in. base.....	3.24c.
Steel plates, ¼ in. and heavier.....	3.34c.

Merchant Steel

	Per Lb.
Tire, 1½ x ½ in. and larger.....	3.30c.
(Smooth finish, 1 to 2½ x ¼ in. and larger).....	3.65c.
Toe-calk, ½ x ¾ in. and larger.....	4.20c.
Cold-rolled strip, soft and quarter hard.....	7.00c.
Open-hearth spring steel.....	4.50c. to 7.00c.
Shafting and Screw Stock:	
Rounds and hex.....	4.15c.
Squares and flats.....	4.65c.
Standard tool steel, base price.....	15.00c.
Extra tool steel.....	18.00c.
Special tool steel.....	23.00c.
High-speed steel, 18 per cent tungsten.....	70c.

Sheets

Blue Annealed

	Per Lb.
No. 10.....	3.89c.
No. 12.....	3.94c.
No. 14.....	3.99c.
No. 16.....	4.09c.

Box Annealed—Black

	Soft Steel C. R. One Pass Per Lb.	Blued Stove Pipe Sheet Per Lb.
Nos. 18 to 20.....	4.15c. to 4.40c.	.....
Nos. 22 and 24.....	4.20c. to 4.45c.	4.95c.
No. 26.....	4.25c. to 4.50c.	5.00c.
No. 28*.....	4.35c. to 4.60c.	5.10c.
No. 30.....	4.55c. to 4.80c.	.....

Galvanized

	Per Lb.
No. 14.....	4.45c. to 4.70c.
No. 16.....	4.60c. to 4.85c.
Nos. 18 and 20.....	4.75c. to 5.00c.
Nos. 22 and 24.....	4.90c. to 5.15c.
No. 26.....	5.05c. to 5.30c.
No. 28*.....	5.35c. to 5.60c.
No. 30.....	5.85c. to 6.10c.

*No. 28 lighter, 36 in. wide, 20c. higher per 100 lb.

Welded Pipe

Standard Weld			Wrought Iron		
	Black	Galv.		Black	Galv.
½ in. Butt....	46	29	½ in. Butt....	4	+19
¾ in. Butt....	51	37	¾ in. Butt....	11	+9
1-3 in. Butt....	53	39	1-1½ in. Butt....	14	+6
2½-6 in. Lap....	48	35	2-in. Lap....	5	+14
7 & 8 in. Lap....	44	17	3-6 in. Lap....	11	+6
11&12 in. Lap....	37	12	7-12 in. Lap....	3	+16

Bolts and Screws

Machine bolts, cut thread, 40 and 10 per cent off list
Carriage bolts, cut thread, 30 and 10 per cent off list
Coach screws, 40 and 10 per cent off list
Wood screws, flat head iron,
72½, 25, 10 and 5 per cent off list

Steel Wire

	Per Lb.
Bright, basic.....	4.25c.
Annealed soft.....	4.50c.
Galvanized annealed.....	5.15c.
Coppered basic.....	5.15c.
Tinned soft Bessemer.....	6.15c.

*Regular extras for lighter gage.

Brass Sheet, Rod, Tube and Wire

BASE PRICE

High brass sheet.....	18½c. to 19½c.
High brass wire.....	18½c. to 19½c.
Brass rods.....	15½c. to 16½c.
Brass tube, brazed.....	26½c. to 27½c.
Brass tube, seamless.....	22½c. to 23½c.
Copper tube, seamless.....	23½c. to 24½c.

Copper Sheets

Sheet copper, hot rolled, 20¼c. to 21¼c. per lb. base.
Cold rolled, 14 oz. and heavier, 3c. per lb. advance over hot rolled.

Tin Plates

Bright Tin	Grade	Grade	Coke—14 x 20	Prime	Seconds
	"AAA"	"A"	80 lb...	\$6.15	\$5.90
	Charcoal	Charcoal	90 lb...	6.30	6.05
	14x20	14x20	100 lb...	6.45	6.20
	IC..	\$8.85	IC..	6.65	6.40
	IX..	12.85	IX..	7.85	7.60
	IXX..	14.40	IXX..	9.00	8.75
	IXXX..	15.75	IXXX..	10.35	10.10
	IXXXX..	17.00	IXXXX..	11.35	11.10

Terne Plates

8 lb. coating, 14 x 20

100 lb.	\$7.00 to \$8.00
IC	7.25 to 8.25
IX	8.25 to 8.75
Fire door stock	9.00 to 10.00

Tin

Straits, pig	57c.
Bar	60c. to 62c.

Copper

Lake ingot	16¼c.
Electrolytic	16½c.
Casting	16 c.

Spelter and Sheet Zinc

Western spelter	9c.
Sheet zinc, No. 9 base, casks.....	12c. open 12½c.

Lead and Solder*

American pig lead	8¼c. to 9¼c.
Bar lead	11c.
Solder, ½ and ½ guaranteed.....	39½c.
No. 1 solder	36½c.
Refined solder	30c.

*Prices of solder indicated by private brand vary according to composition.

Babbitt Metal

Best grade, per lb.....	75c. to 90c.
Commercial grade, per lb.....	35c. to 50c.
Grade D, per lb.....	25c. to 35c.

Antimony

Asiatic	16c. to 18c.
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Aluminum

No. 1 aluminum (guaranteed over 99 per cent pure), in ingots for remelting, per lb.....	36c.
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Old Metals

Business is quiet because of the uncertain condition of the market. Dealers' buying prices are as follows:

	Cents Per Lb.
Copper, heavy crucible	11.50
Copper, heavy wire	11.00
Copper, light bottoms.....	9.25
Brass, heavy	6.75
Brass, light	5.50
Heavy machine composition.....	8.25
No. 1 yellow brass turnings.....	8.00
No. 1 red brass or composition turnings.....	8.00
Lead, heavy	6.75
Lead, tea	5.00
Zinc	4.00
Cast aluminum	17.00
Sheet aluminum	17.00